

**VANCOUVER COMMUNITY COLLEGE**

**SCHOOL OF HEALTH SCIENCES**  
**Dental Technician/Denturist Department**

**Prior Learning Assessment  
and Recognition**

**Dental Technician Program**

**Student Information Package**

PRIOR LEARNING ASSESSMENT AND RECOGNITION  
for the  
DENTAL TECHNICIAN PROGRAM

TABLE OF CONTENTS

A.	ABOUT PRIOR LEARNING ASSESSMENT AND RECOGNITION	
	I	Introduction ..... Page 3
	II	Eligibility ..... Page 3
	III	Fees ..... Page 4
	IV	Grading ..... Page 4
	V	Residency Requirement ..... Page 4
	VI	The Process of Prior Learning Assessment . Page 5
	VII	If You are Unsuccessful in Your Prior Learning Assessment ..... Page 5
B.	THE DENTAL TECHNICIAN PROGRAM	
	I	Program Learning Outcome ..... Page 6
	II	Courses in the Dental Technician Program ... Page 7
	III	Course Descriptions ..... Page 8
C.	PRIOR LEARNING ASSESSMENT IN THE DENTAL TECHNICIAN PROGRAM	
	I	Introduction ..... Page 13
	II	Semester One ..... Page 13
	III	Semester Two ..... Page 27
	IV	Semester Three ..... Page 40
	V	Semester Four ..... Page 49
	VI	Next Steps ..... Page 62
	APPENDIX	..... Page 63
	•	Prior Learning Assessment and Recognition Policy

# PRIOR LEARNING ASSESSMENT AND RECOGNITION for the DENTAL TECHNICIAN PROGRAM

## A. ABOUT PRIOR LEARNING ASSESSMENT AND RECOGNITION

### I Introduction

Thank you for your interest in the Dental Technology Program at Vancouver Community College. This booklet has been designed to give you information about the process of prior learning assessment and recognition in this program. You may be eligible to be assessed for prior learning that can translate to credit in the Dental Technology program.

When you apply for prior learning assessment, you are saying “*I already know and can do what is required or expected in the course. I do not need to take it. Here is my proof.*” In other words, prior learning assessment and recognition (PLAR) is the assessment of what you have learned through previous education and experience that can be recognized towards credit in a college course. It is a systematic process to evaluate and give credit to that learning--gained in a variety of contexts-- by assessing against the standards required by Vancouver Community College’s courses in the Dental Technician program. This process enables students to obtain recognition for learning that they have achieved through both formal and non-formal learning experiences.

It is important to note that credit for a course is not awarded for experience, it is only awarded for learning that has occurred as a result of the experience. As an example, rather than stating that you have been working as a dental technician assistant for 5 years, you need to provide evidence of what you know, value, and can perform as a result of that experience.

### II Eligibility

Prior Learning Assessment is offered for most of the courses in the Dental Technician program. You are eligible to participate in Prior Learning Assessment and Recognition for these courses if:

- You have met the program pre-requisites and have officially applied and **been accepted** to the Dental Technician Program
- You have applied for Prior Learning Assessment and Recognition (see the appropriate form included in this package)

The program prerequisites (entrance requirements) are as follows:

1. Grade 12, with  
Academic English 12\* C+ or better or equivalent: (VCC English 081 and 091 with a C+ or better)  
Human Biology 12 C+ or better  
Chemistry 11 or Physics 11 C+ or better
2. Career Investigation Report
3. Successful completion of a dexterity test with a minimum score of 4.5.

For those presently working as dental technician assistants, numbers 2 and 3 of the above requirements can be waived upon receipt of a letter confirming employment (a minimum of two years) from your employer.

### **III Fees**

A fee will be charged by Vancouver Community College for prior learning assessment. The fee varies, depending on the type of assessment required. Essentially they may be:

- Challenge exams – one-half of the current tuition rate per credit
- Skills/Portfolio Assessment – charged on an hourly basis (\$80.00 per hour)

The exact cost for prior learning assessment will be indicated on the PLA application form.

### **IV Grading**

Through prior learning assessment, we are determining if you already have the knowledge, skills and values required of a student completing the college course. If, through PLA, you prove that you do have these, you will receive credit for that course. You will also receive a letter grade (as per the VCC Grading Policy) and a transcript for the course.

Success in all courses is achieved with an overall 64% (C+) or higher grade in the comprehensive exams **and** a satisfactory standing in all laboratory assignments and evaluations.

### **V Residency Requirement**

For all programs at Vancouver Community College, there is a “residency requirement”. That means at least some part of the program must be taken as a registered student attending VCC. For the Dental Technician Program, prior learning assessment and recognition can total no more than 75% of the total credits for the program (80.0 credits). In other words, students are expected to complete at least 25% of the course credits (20.0 credits) as a registered student attending VCC. VCC’s Prior Learning Assessment Policy is also included for your reference in Appendix A.

Please be aware that at the present time, completion of the residency requirement for this program may take some time, for a variety of reasons. However, the College is presently working to develop many of the courses required per distance delivery (distributed learning). We expect that these courses will be available by September, 2006. Also, where space is available, and for those students who are able to attend classes at the downtown campus of VCC, students may be inserted into courses within the regular program. In addition, if there is enough interest to form a small cohort, additional courses may be held to accommodate PLA students. These would normally be conducted evenings, weekends, or during the summer, and could possibly be offered in areas outside of the lower mainland.

## **VI The Process for Prior Learning Assessment**

Various assessment options are available in the Dental Technician program. The types of assessments for a particular course are determined by the course's learning outcomes. These consist of the following:

- Challenge examination – a comprehensive examination based on the content of the course materials of the particular course being challenged
- Skills assessment -- a demonstration of the skills required to successfully complete the course outcomes
- Portfolio assessment -- an assembly of a portfolio of documents and/or other materials in which you link what you have learned to the learning outcomes of the particular course for which you are requesting assessment
- A combination of the above

For the Dental Technician Program, the two types of assessments that will be used are challenge examination for the theory in each of the courses, and skills assessment for demonstration of particular skills in each course. Where more than one type of assessment is required in a course, students must be successful in *all* assessment challenges.

## **VII If You Are Unsuccessful in Your Prior Learning Assessment**

If you are unsuccessful in your Prior Learning Assessment, you will be required to enrol in the course to obtain credit. Therefore, it is important you feel competent in your ability to complete the PLA process for a particular course. There is one opportunity only to challenge a particular course. You will also be required to pay tuition in all courses, and the Prior Learning Assessment and Recognition fee is not refundable.

## **B. THE DENTAL TECHNICIAN PROGRAM**

### **I Program Learning Outcomes**

Vancouver Community College offers a two-year Dental Technology diploma program leading to employment in a dental laboratory and eligibility to write licensing examinations as per the requirements of the College of Dental Technicians of British Columbia. Graduates will have acquired the specialized knowledge, skills and attitudes that relate to the scope of dental technology practice. Therefore, graduates of the Dental Technician program at Vancouver Community College will reliably demonstrate the ability to:

- Apply provincial and national codes of conduct when providing dental technology services
- Develop a well managed business practice within dental technology settings that the community
- Use strategies for systematic inquiry to justify and/or revise dental technology services
- Make decisions regarding dental technology services that reflect critical thinking time management and problem solving
- Integrate pertinent theoretical knowledge of anatomy, physiology, morphology and pathology, into the provision of dental technology practice
- Integrate principles of physics, chemistry, general science and properties of materials associated with the fabrication of dental prosthetic devices and appliances
- According to prescription; design, fabricate, modify and repair fixed prostheses, removable complete and partial dentures and appliances for orthodontics, oral maxillo-facial surgery and other dental specialties.
- Operate and maintain dental laboratory equipment in accordance with standard safety and maintenance procedures, WHMIS, and infection control protocol.
- Produce clear and accurate written and oral communications for the public and other professionals regarding dental technology issues and services.
- Work effectively as a team member
- Take responsibility for decisions and actions pertaining to dental technology services.
- Carry out all duties in an ethical and professional manner
- Demonstrate a commitment to quality dental technology service through self-evaluation and life long learning.

The dental technology program is based on the College of Dental Technicians of BC's Required Standards of Competencies for Entry to the Dental Technician Profession and the faculty's vision for dental technology education and practice.

## II Courses in the Dental Technician Program

There are 4 semesters to this program. Courses have been assigned course numbers and credits representative of the hours of instruction. Those courses with \*\* indicated that they have a laboratory component in addition to the theory.

	Course number	Course name	Credits
<b>Semester 1</b>	1866	Anatomy & Physiology	1.0
	1867	Professionalism 1	1.0
	1868	Health & Safety	1.0
	1869	**Dental Anatomy & Morphology	3.0
	1870	**Introduction to Complete Dentures	5.5
	1871	**Introduction to Partial Dentures	4.5
	1872	**Introduction to Orthodontics	4.0
		<b>Total Credits</b>	<b>20.0</b>
<b>Semester 2</b>	2000	Dental Laboratory Science	0.5
	2001	Fundamentals of Oral Pathology	0.5
	2002	**Complete Dentures 1	4.0
	2003	**Partial Dentures 1	4.0
	2004	**Orthodontics 1	4.0
	2005	**Introduction to Fixed Prosthodontics	6.0
	2006	Practicum 1	1.0
		<b>Total Credits</b>	<b>20.0</b>
<b>Semester 3</b>	3000	Professionalism 2	0.5
	3001	**Complete Dentures 2	3.5
	3002	**Partial Dentures 2	4.5
	3003	**Orthodontics 2	4.0
	3004	**Fixed Prosthodontics	7.5
		<b>Total Credits</b>	<b>20.0</b>
<b>Semester 4</b>	4000	Business Management	1.5
	4001	**Complete Dentures 3	3.0
	4002	**Partial Dentures 3	3.0
	4003	**Orthodontics 3	3.0
	4004	**Fixed Prosthodontics 2	6.5
4005	Practicum 2	3.0	
		<b>Total Credits</b>	<b>20.0</b>
<b>TOTAL PROGRAM CREDITS</b>			<b>80.0</b>

\*\* These courses have both a theory and a practice (laboratory) component.

### III Course Descriptions

#### Semester One

**Course 1866          Anatomy and Physiology          1.0 credit**

Provides a science-based foundation for dental technology practice. This course introduces the student to the specifics related to basic structure and function of the human body and the anatomical features and hard and soft tissues of the head and neck.

**Course 1867          Professionalism 1          1.0 credit**

This course discusses the professions within dentistry, including ethics, jurisprudence, and regulation. Information also includes the principles of interpersonal communication as well as written and oral communication styles. Problem solving, time management and self-evaluation strategies are also introduced. Strategies for enhancing learning while a student are also explored.

**Course 1868          Health and Safety          1.0 credit**

This course is designed to address the personal and professional issues regarding health and safety for students working in the laboratory environment. Basic laboratory hygiene, infection control, WHMIS, equipment, and tool/chemical use and maintenance are an integral part of this course. Personal health, safety and wellness are topics designed to assist all health care workers in the particular environment.

**Course 1869          Dental Anatomy and Morphology          3.0 credits**

Basic dental terminology, annotation and anatomy provide the basis of the knowledge within this course. This course also provides the theory and practical application related to the development and eruption of teeth and the anatomical feature of both the deciduous and permanent dentition.

**Course 1870          Introduction to Complete Dentures          5.5 credits**

Foundation knowledge and supportive dental laboratory skills related to the fabrication of complete dentures will be introduced and practiced. The knowledge, skills and attitudes that are required during dental technology practice of: preparing and producing working casts, model duplication, fabrication of custom trays, base-plates and occlusion rims, use of central bearing devices, setting up articulators as well as the selection of moulds and shared are the foundation of the theory and applied laboratory practice of this course.

**Course 1871          Introduction to Partial Dentures          4.5 credits**

Foundation knowledge and supportive dental laboratory skills related to the fabrication of partial dentures will be introduced and practiced. The knowledge, skills and attitudes that are required during dental technology practice of: preparing and producing working casts, model duplication, fabrication of custom trays, base-plates and occlusion rims, use of central bearing devices, setting up

articulators, creating clasps, as well as the selection of moulds and shades are the foundation of the theory and applied laboratory practice of this course. Students will also fabricate simple removable partial dentures.

**Course 1872 Introduction to Orthodontics 4.0 credits**

This theory and laboratory course provides an introduction to skeletal and occlusal abnormalities and principles for orthodontic correction, as well as to the basic laboratory procedures relating to the fabrication of orthodontic study models, bending wires, clasps and bows as well as specific simple fixed and removable orthodontic appliances.

**Semester Two**

**Course 2000 Dental Laboratory Science 0.5 credit**

To expand the science base of dental technology practice and to provide the student with information about oral and occlusal function and dysfunction that can be applied to the fabrication of oral prostheses. This course builds on information introduced in Semester One and focuses on occlusion, TMJ and occlusal function and dysfunction. Also included are the basic concepts of physics and chemistry as they pertain to dental prosthetics.

**Course 2001 Fundamental of Oral Pathology 0.5 credit**

This course is designed to introduce the students to the general principles of pathology. This will include the clinical signs and symptoms and the underlying cellular changes. Particular emphasis will be placed on pathologies of the orofacial region.

**Course 2002 Complete Dentures 1 4.0 credits**

This theory and practice courses builds on the knowledge and skills introduced in Introduction to Complete Dentures. The focus of this course is related to denture maintenance and the role of the dental technician as it relates to the oral health of the complete denture patient. Included are the laboratory skills of fabricating, polishing and finishing complete dentures, as well as the practice of repairing, relining, soft relining and rebasing dentures.

**Course 2003 Partial Dentures 1 4.0 credits**

As a continuation of Introduction to Partial Dentures, students will fabricate various wrought wire/acrylic and case metal removable partial dentures.

**Course 2004 Orthodontics 1 4.0 credits**

The theoretical knowledge and supportive laboratory skills related to the fabrication of simple fixed and removable orthodontic appliances, and their repair, will be introduced and practiced. The fabrication of removable Hawley retainers, removable appliances with bite planes, fixed unilateral space maintainers, bilateral space maintainers, night guards, bleaching trays, Essex retainers, and simple repairs of orthodontic appliances are the foundation of the theory and applied practice of this course.

**Course 2005 Introduction to Fixed Prosthodontics 6.0 credits**

Foundation knowledge and supportive laboratory skills related to the fabrication of single unit metal restorations is introduced and practiced. The knowledge, skills and attitudes that are required during dental technology practice of: preparing and trimming master casts, producing custom trays, articulating casts using semi-adjustable articulators, fabrication of single unit metal restorations, and the repair of restorations are the foundation of the theory and applied laboratory practice of this course.

**Course 2006 Practicum 1 1.0 credit**

This series of observations allow students to experience the variety of dental labs, dental offices and/or UBC to enhance their understanding and appreciation for the role and scope of practice of a dental technology practitioner.

**Semester Three**

**Course 3000 Professionalism 2 0.5 credit**

This course is a continuation of professionalism 1. It focuses on employment options and strategies including job search skills, resume preparation, interviews and work satisfaction. The goal is to prepare the student to find employment as a graduate.

**Course 3001 Complete Dentures 2 3.5 credits**

This theory and practical course is a continuation of Introduction to Complete Dentures and Complete Dentures 1. Fabrication of complete dentures includes mounting casts on articulators, selecting and arranging teeth, waxing up, investing, processing and finishing techniques. Various types of complete dentures and an increase of the degrees of difficulty will be included in this course. Maintenance of previously achieved laboratory skills will be expected.

**Course 3002 Partial Dentures 2 4.5 credits**

As a continuation of Introduction to partial dentures and Partial Dentures 1 students will fabricate cast partial dentures as prescribed to a given variety of situations and degrees of difficulty. Maxillo-facial prostheses will also be discussed, including the fabrication of an obturator. The use of semi-adjustable articulators, facebows/earbows, and shades and moulds will be integrated into this component of learning. Maintenance of previously attained skills will be expected.

**Course 3003 Orthodontics 2 4.0 credits**

As a continuation of Introduction to Orthodontics and Orthodontics 1, students will fabricate complex fixed and removable orthodontic appliances as prescribed. This course expands upon the theory base of the previous semesters and will

enhance the student's ability to design appliances, problem solve and self-evaluation. Maintenance of the previously achieved orthodontic competencies will be expected.

**Course 3004                      Fixed Prosthodontics 1                      7.5 credits**

As a continuation of Introduction to Fixed Prosthodontics, students will fabricate single unit metal restorations as prescribed. Included is the introduction to dental ceramics including characteristics and composition of porcelain, esthetics, colour and shading, and the manipulation and firing of porcelain. Fabrication of single unit ceramic-metal restorations and the correction of dental porcelain and metal defects and faults will be practiced. This course expands upon the theory base of the previous semesters and will enhance the student's ability to design, critique, and self-evaluate their laboratory prostheses. Maintenance of the previously achieved competencies will be expected.

**Semester Four**

**Course 4000                      Business Management                      1.5 credits**

This course begins with the basic concepts of business management including profits, loss and a method for costing production as well as employee management and relations, and concepts for marketing. This course continues by focusing on the dental technician as a business owner. Students explore personal and market factors that affect a successful business, and discuss components of a business plan. In addition, students discuss information relating to dental laboratory ownership and current professional issues.

**Course 4001                      Complete Dentures 3                      3.0 credits**

This theory and practical course is a continuation of the fabrication of complete dentures integrating the degrees of difficulty. It includes the fabrication of compound cases, immediate dentures, overdentures and dentures over implants.

**Course 4002                      Partial Dentures 3                      3.0 credits**

This theory and practical course is a continuation of the fabrication of partial dentures integrating increasing degrees of difficulty. It includes the fabrication of compound and complex cases, removable partial dentures with attachments and the repair, reline, rebase and extension of partial dentures.

**Course 4003                      Orthodontics 3                      3.0 credits**

This course expands upon the orthodontic theory and laboratory skills from the past three semesters. While expected to maintain the previously achieved orthodontic competencies, student will design, fabricate, problem solve and self-evaluate additional complex fixed and removable orthodontic appliances

**Course 4004                      Fixed Prosthodontics 2                      6.5 credits**

This theory and laboratory course expands upon information and techniques into the study and fabrication of multiple unit restorations as the dental technicians

students learn to fabricate various types of metal, ceramo-metal, and all ceramic/porcelain/composite bridge. Advanced prosthodontic techniques and prescriptions are followed.

**Course 4005                  Practicum 2                                  3.0 credits**

This comprehensive practical work experience is designed to allow students to practice their dental laboratory skills in the work environment. During the practicum students will complete daily journals and evaluation reports will be completed by their mentor. Whenever possible students will be placed in a practicum site where there is a potential for employment.

## C. PRIOR LEARNING ASSESSMENT IN THE DENTAL TECHNICIAN PROGRAM

### I Introduction

There are certain courses within the Dental Technician Program where Prior Learning Assessment is not available. These courses will, therefore, need to be taken by all students, and are included as part of the residency requirement. These courses are:

• Course 1867	Professionalism 1	1.0 Credits
• Course 2006	Practicum 1	1.0 Credits
• Course 3000	Professionalism 2	0.5 Credits
• Course 4005	Practicum 2	<u>4.0 Credits</u>
	Total	6.5 Credits

To complete the residency requirement, a total of **20 credits** must be completed in the Dental Technician Program. Therefore, another 13.5 course credits must be completed within the program. This could be in an area where you have had little or no experience, or where you would like to learn more. You may need to discuss this with the Department Head of the Dental Technician Program.

In the following pages, you will find descriptions of all of the courses in the Dental Technician Program for which prior learning assessment is available. This will include learning outcomes for each course. Learning Outcomes are the critical elements that will be used to assess your prior learning. As you prepare to demonstrate your prior learning, you will need to measure your learning against these outcomes.

### II Semester One Courses

#### **Course 1866      ANATOMY AND PHYSIOLOGY      1.0 Credits**

This course introduces the student to the specifics related to basic structure and function of the human body and the anatomical features and hard and soft tissues of the head and neck.

#### Learning Outcomes:

1. State the basic structure and function of the human body.
  - 1.1 Define anatomical terms including body planes.
  - 1.2 State the basic structure and function of the body systems.
  - 1.3 Identify factors influencing body growth.
  - 1.4 State cell structure and function.
  - 1.5 State tissue classifications and their organization.
  - 1.6 State the structure and function of the various body tissues.
  - 1.7 Describe metabolism, including the role of enzymes.

- 1.8 Describe body homeostasis.
- 1.9 Describe body acids and the pH range within body organs
2. Describe and identify on a diagram anatomical features of the head and neck.
  - 2.1 Describe and identify soft tissue landmarks of the face.
  - 2.2 Describe the lymph system of the head and neck.
3. Describe and identify on a diagram soft tissues of the dentulous and edentulous oral cavity.
  - 3.1 State boundaries of the oral cavity.
  - 3.2 Describe and identify tissues and landmarks of the oral cavity.
  - 3.2 Describe the structure and function of the tongue and identify landmarks of the tongue.
  - 3.3 landmarks of the tongue.
  - 3.4 Identify and state functions of the salivary glands.
  - 3.5 Describe oral changes with age and landmarks of the edentulous mouth.
4. Identify and describe bone and those that comprise the cranium, skull, face, maxilla and mandible.
  - 4.1 Identify the composition and purpose of bone.
  - 4.2 Describe the development of bone.
  - 4.3 Identify the bones of the skull.
  - 4.4 Describe the general shape and function of the bones which make up the cranium.
  - 4.5 Identify sutures of the cranium and describe their function.
  - 4.6 Identify bones of the facial skeleton.
  - 4.7 Identify the function, anatomy, and landmarks of the mandible.
  - 4.8 Identify the function, anatomy, and landmarks of the maxilla.
5. Identify and describe the temporomandibular joint (TMJ).
  - 5.1 Describe the structure of the temporomandibular joint.
  - 5.2 State the purpose of the articular disc and the synovial fluid.
  - 5.3 List and describe the ligaments associated with the TMJ.
  - 5.4 Describe the action of the TMJ.
  - 5.5 Describe the range of jaw movements.
  - 5.6 Describe the relationship of teeth during jaw movements.
  - 5.7 Describe function of the TMJ during mandibular movement.
  - 5.8 Describe physiological control and forces relating to jaw movements and mastication.
6. Identify and describe sinuses.
  - 6.1 Identify and state functions of sinuses and air cells of the skull.
7. Identify and describe the muscles of mastication, facial expression and tongue.
  - 7.1 Identify and state the functions of the muscles of the oral region.
  - 7.2 Define point of origin, point of insertion.
  - 7.3 Describe types of muscles.
  - 7.4 Identify major muscles of mastication, their location and their functions
  - 7.5 Identify the syprahyoids as a group, their attachments and their functions.
  - 7.6 Identify the infrahyoids as a group, their attachments and their functions.

- 7.7 Identify the muscles of facial expression, their origin, insertion and functions.
- 7.8 Identify the intrinsic and extrinsic muscles of the tongue, their location and their functions.
- 8. Identify and describe the blood vessels of the head and neck.
  - 8.1 Identify and describe the arteries of the head and neck including their branches and functions.
  - 8.2 Identify the groups of veins of the head and neck and state their functions.
- 9. Identify and describe the nerves of the head and neck.
  - 9.1 Explain the coordination of receptors and effectors in regulating nerve impulses.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Anatomy and Physiology, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.

### **Course 1868                      HEALTH AND SAFETY                      1.0 credits**

This theory course is designed to address the personal and professional issues regarding health and safety for students working in the laboratory environment. Basic laboratory hygiene, infection control, WHMIS, equipment, hand tool/chemical use and maintenance is an integral part of this course. Personal health, safety and wellness are topics designed to assist all health care workers in their particular environment.

### **Learning Outcomes**

- 1. Discuss hazards in the dental laboratory, including principles for safety and emergency response.
  - 1.1 Discuss personal safety measures for the dental laboratory.
  - 1.2 Discuss potential hazards within the dental laboratory and how to prevent possible injury.
  - 1.3 Discuss emergency response procedures and policies for VCC and the dental laboratory.
  - 1.4 State basic emergency care for common dental laboratory emergencies.
- 2. Discuss Workplace Hazardous Material Information System (WHMIS).
  - 2.1 Discuss the purpose of the legislation.
  - 2.2 Discuss WHMIS information.

- 2.3 Discuss the types of controlled product use in the dental laboratory.
- 3. Discuss basic laboratory hygiene.
  - 3.1 Discuss purpose of cleanliness of laboratory. Learning Outcomes
  - 3.2 Identify and describe maintenance of areas that require routine cleaning.
  - 3.3 Discuss cleaning schedule - expectations and responsibilities.
- 4. Discuss principles of infection control.
  - 4.1 Describe microorganisms and their transmission
  - 4.2 Describe body defences against pathological agents
  - 4.3 Describe infection control procedures and protocols in the dental laboratory.
- 5. Discuss the health and safety equipment/devices used as protection during laboratory practice.
  - 5.1 Discuss personal protective clothing and barriers.
  - 5.2 Discuss equipment/devices used as protection while working in the laboratory.
- 6. Discuss the principles of health promotion.
- 7. Discuss the principles of preventive dentistry.
  - 7.1 Define preventive dentistry.
  - 7.2 Describe the goal and benefits of preventive dentistry.
  - 7.3 Describe tooth deposits.
  - 7.4 Describe the development of caries and caries prevention.
  - 7.5 State factors contributing to the development of periodontal disease, and periodontal disease prevention.
  - 7.6 Describe the use of basic oral health care devices, agents and techniques.
  - 7.7 List oral health care devices and techniques that would be of personal benefit.
- 8. Discuss the need for dental professionals to “role model” oral health.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Health and Safety, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.
- and
- B. Submit a letter from an employer that describes your safety practices in the work environment. This letter should state that you practice in a safe and responsible manner.

### **Course 1869 DENTAL ANATOMY AND MORPHOLOGY 3.0 Credits**

Basic dental terminology annotation and anatomy provide the basis of the knowledge within this course. This course also provides the theory and practical application related to the development and eruption of teeth and the anatomical features of both the deciduous and permanent dentition.

### Learning Outcomes

1. Identify dental terminology, annotation and basic characteristics of teeth.
  - 1.1 Understand terminology relating to the classification of dentition.
  - 1.2 Describe anatomical parts of a tooth.
  - 1.3 Describe types of teeth and their function.
  - 1.4 Describe tissues of the tooth.
  - 1.5 Describe surface of teeth.
  - 1.6 Describe general landmarks of teeth.
  - 1.7 Describe and identify line angles, pint angles, division of teeth and Black's classifications of cavities and restorations.
  - 1.8 Understand the physiology of tooth form.
  - 1.9 Describe tissues surrounding the tooth.
  - 1.10 Identify on a diagram and draw basic tooth structures discussed in the above objectives
  - 1.11 .Understand annotation systems for permanent and deciduous teeth (Palmer, Military, and International systems)
2. Describe the development and eruption of teeth.
  - 2.1 Describe phases of the growth stages of tooth development.
  - 2.2 Describe the calcification stage of tooth development.
  - 2.3 Describe the eruption of deciduous and permanent teeth.
  - 2.4 Describe attrition, erosion and abrasion.
3. Identify on a diagram and/or models, and draw the anatomical features of deciduous teeth including basic features of occlusion.
  - 3.1 Understand, identify and draw characteristics and landmarks of deciduous teeth.
4. Identify on a diagram and/or models, and draw the anatomical features of permanent teeth including basic features of occlusion.
  - 4.1 Understand, identify and draw characteristics and landmarks of permanent teeth.
  - 4.2 Define basic terminology relating to deciduous and permanent occlusion.

### Prior Learning Assessment and Recognition

In order to be assessed for equivalent knowledge and skills in Dental Anatomy and Morphology, you will do the following:

- A. Write a comprehensive exam based on all the learning outcomes.
- and
- B. Recreate the anatomy of assigned deciduous and permanent dentition to the stated criteria and standards.

### **Course 1870 INTRODUCTION TO COMPLETE DENTURES 5.5 Credits**

Foundation knowledge and supportive dental laboratory skills related to the fabrication of complete dentures will be introduced and practiced. The knowledge, skills and attitudes that are required during dental technology practice of: preparing and producing working casts, model duplication,

fabrication of custom trays, baseplates and occlusion rims, use of central bearing devices, setting up articulators as well as the selection of moulds and shades are the foundation of the theory and applied laboratory practice of this course.

### Learning Outcomes

1. Discuss the basic concepts relating to the fabrication of complete dentures
  - 1.1 Discuss the objectives of prosthodontic treatment
  - 1.2 Describe the sequence of clinical and laboratory procedures for the fabrication of complete dentures
  - 1.3 Discuss the factors that affect aesthetics of complete dentures
  - 1.4 Relate knowledge about oral anatomy of the edentulous mouth to complete denture fabrication.
2. Discuss the history, chemical and physical properties of dental materials introduced in this course including the principles of handling and manipulation
  - 2.1 Describe the evolution of materials used to preserve teeth and restore lost teeth
  - 2.2. Describe the various interrelationships of the dental technician for the supply of dental materials their fabrication into dental prostheses
  - 2.3 Discuss the composition, properties and manipulation of impression materials.
  - 2.4 Discuss the composition, properties and manipulation of gypsum materials
  - 2.5 Discuss the properties, characteristics and manipulation of waxes used in the dental laboratory
  - 2.6 Discuss the properties, characteristics and manipulation of shellac
  - 2.7 Discuss separating materials and their uses
  - 2.8 Discuss the physical and chemical properties of synthetic resin polymers and the manipulation of acrylic resins used for the fabrication of custom impression trays.
  - 2.9 Discuss cleaning agents used with dental materials in the laboratory
3. Discuss the safe use and maintenance of lab equipment and instruments used in this course.
  - 3.1 Discuss the guidelines for the use and maintenance of the lab equipment used in this course
  - 3.2 Discuss the guidelines for the use and maintenance of hand tools and instruments used in this course.
  - 3.3 Identify potential hazards related to the equipment, materials and instruments used in this course.
4. Discuss preliminary and master impressions and dental casts including basic principles for obtaining impressions and fabricating casts
  - 4.1 Describe preliminary and final impressions including their role in the fabrication of complete dentures
  - 4.2 State principles for obtaining accurate impressions
  - 4.3 Discuss dental casts and their use in dentistry
  - 4.4 Discuss principles for trimming preliminary and master casts

5. Discuss custom trays and the principles for fabrication using various methods and materials
  - 5.1 Describe the various types of custom trays including their purpose
  - 5.2 Discuss general principles for fabricating custom trays
  - 5.3 Discuss principles for fabricating acrylic resin custom trays
  - 5.4 Discuss principles for fabricating shellac custom trays
  - 5.5 Discuss principles for fabricating vacuum formed custom trays.
6. Discuss baseplates and occlusion rims and principles for fabrication using various methods and materials
  - 6.1 Describe baseplates including their function
  - 6.2 Discuss principles relating to the fabrication of wax baseplates
  - 6.3 Discuss principles relating to the fabrication of shellac baseplates
  - 6.4 Discuss principles for fabricating stabilized baseplates
  - 6.5 Describe occlusal bite rims including their function
  - 6.6 Discuss principles for fabrication occlusion rims on baseplates
7. Discuss centric relation of the edentulous mouth and intraoral and extraoral central bearing devices, including the principles for setting up a Gothic Arch Pin Tracer.
  - 7.1 Discuss occlusal and jaw relationships of the edentulous mouth
  - 7.2 Discuss records used to register edentulous jaw relationships
  - 7.3 Describe central bearing devices
  - 7.4 Discuss general principles relating to the setting up a central bearing device
  - 7.5 Discuss variations in principles needed for setting up the Gothic Arch type of central bearing device
8. Discuss the principles of using articulators for setting up the casts of the edentulous mouth.
  - 8.1 Identify the types of articulators that can be used during the fabrication of complete dentures
  - 8.2 Describe the principles for setting up the articulator in preparation for fabricating complete dentures
  - 8.3 Using the articulator set up 0 degree teeth, Class 1 occlusion for try in
9. Determine accurate moulds and shades for the fabrication of aesthetic complete dentures
  - 9.1 Identify the aesthetics that must be considered when determining the required mould and shade of denture teeth
  - 9.2 Discuss the various mould shapes that could be utilized for denture tooth selection
  - 9.3 Identify the criteria to use to determine the correct mould
  - 9.4 Discuss the various shades that can be utilized for denture tooth selection
  - 9.5 Identify the criteria used to determine aesthetic shades for denture teeth

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Introduction to Complete Dentures, you will do the following:

- A. Write a comprehensive exam based on all the learning outcomes.
- and
- B. Pour and trim master edentulous casts using a variety of methods (discuss boxing technique)
- and
- C. Fabricate custom trays for dentures (acrylic, vacuum, shellac)
- and
- D. Fabricate baseplates (acrylic, zinc oxide) and occlusion rims using a variety of methods
- and
- E. Set up semi-adjustable articulators

### **Course 1871 INTRODUCTION TO REMOVABLE PARTIAL DENTURES 4.5 Credits**

Foundation knowledge and supportive dental laboratory skills related to the fabrication of removable partial dentures will be introduced and practiced. The knowledge, skills and attitudes that are required for dental laboratory practice of: preparing and producing working casts, model duplication, fabrication of custom trays, baseplates and occlusion rims, used of central bearing devices, setting up articulator, creating clasps, as well as the selection of moulds and shades are the foundation of the theory and applied laboratory practice of this course. Students will also fabricate simple removable partial dentures

#### **Learning Outcomes**

1. Discuss basic concepts relating to the fabrication of removable partial dentures
  - 1.1 Discuss objectives of removable partial denture treatment
  - 1.2 Define a removable partial denture
  - 1.3 Discuss the classification of removable partial dentures
  - 1.4 State types of removable partial dentures including their basic differences
  - 1.5 Describe the component parts of removable partial dentures and their function
  - 1.6 Discuss the advantages and disadvantages of wrought wire/acrylic base removable partial dentures and cast removable partial dentures
    - 1.7 Discuss the real and potential effect of removable partial dentures on oral hard and soft tissues and oral function
  - 1.8 Describe psychological factors influencing the patient's acceptance of removable partial dentures

2. Discuss custom trays and the principles for fabrication for removable partial dentures.
  - 2.1 Recall knowledge about the various types of custom trays and their purpose (from Introduction to Complete Dentures)
  - 2.2 Discuss the principles for fabricating custom trays for removable partial dentures using a variety of methods and materials including: acrylic resin, shellac and vacuum formed custom trays.
3. Discuss preliminary and master impressions and dental casts including basic principles for obtaining impressions and fabricating casts.
  - 3.1 Describe preliminary and final impressions including their role in the fabrication of removable partial dentures
  - 3.2 Recall knowledge for obtaining accurate impressions (from Introduction to Complete Dentures)
  - 3.3 Recall knowledge for the trimming of preliminary and master casts (from Introduction to Complete Dentures)
4. Discuss baseplates and occlusion rims and principles for fabrication removable partial dentures.
  - 4.1 Recall knowledge relating to baseplates including their function (from Introduction to Complete Dentures)
  - 4.2 Discuss the principles relating to the fabrication of wax baseplates for removable partial dentures
  - 4.3 Discuss the principles relating to the fabrication of shellac baseplates for removable partial dentures
  - 4.4 Discuss the principles relating to the fabrication of stabilized baseplates
  - 4.5 Describe the principles for fabricating occlusal rims for removable partial dentures
5. Discuss principles of occlusion and articulation relating to partially edentulous mouths and removable partial dentures
  - 5.1 Discuss the articulation of natural teeth
  - 5.2 Discuss occlusal and jaw relationships of the edentulous mouth and edentulous jaw relation records
  - 5.3 Discuss occlusal stresses and loads of the partially edentulous mouth on a removable partial denture
  - 5.4 Discuss physical forces associated with removable partial dentures and their effect on the function of the removable partial denture
  - 5.5 Describe the occlusal requirements of natural teeth that are supporting a removable partial denture
  - 5.6 Discuss factors affecting the occlusal harmony of removable partial dentures
  - 5.7 Describe trauma which may result from malocclusion of natural or prosthetic teeth
6. Discuss setting up the articulator for partial denture fabrication.
  - 6.1 Identify the types of articulators that can be used during the fabrication of partial dentures
  - 6.2 Describe the principles for setting up the articulator in preparation for fabricating partial dentures

- 6.3 Using the articulator set up for fabrication of the wrought wire/acrylic partial denture
- 7. Discuss the aesthetics, form and function of removable partial dentures.
  - 7.1 Discuss problems associated with aesthetics or removable partial dentures
  - 7.2 Discuss factors affecting the function of removable partial dentures
  - 7.3 Discuss principles of aesthetics, form and function as they related to tooth selection and arrangements of artificial teeth for removable partial dentures.
- 8. Discuss materials used for the fabrication of removable partial dentures, including principles for safe handling and manipulation.
  - 8.1 Recall knowledge about dental materials (from Introduction to Complete Dentures)
  - 8.2 Discuss impression materials used with partially edentulous mouths
  - 8.3 Discuss investments, including the composition of refractory investments and principles for manipulation
  - 8.4 Describe waxes used for the fabrication of removable partial dentures
  - 8.5 Discuss acrylic resins used for the fabrication of removable partial dentures
  - 8.6 Discuss the composition and properties of precious metals and base metal alloys used for fabrication removable partial dentures, including factors influencing metal flow.
  - 8.7 Describe separating mediums, cleaning agents and solutions used for the fabrication of removable partial dentures
  - 8.8 Describe the effect of materials used for the fabrication of removable partial dentures of oral tissues.
  - 8.9 Discuss the safe use, storage and manipulation of the materials that are used in this course.
- 9. Discuss the safe use and maintenance of laboratory instruments and equipment introduced in this course.
  - 9.1 Recall the guidelines for the safe use and maintenance of laboratory equipment used for the fabrication of complete dentures
  - 9.2 Discuss guidelines for the safe use and maintenance of burnout ovens
  - 9.3 Discuss guidelines for the safe use and maintenance of the high speed bench lathe
  - 9.4 Discuss the safe use and maintenance of hand instruments and tools introduced in this course.
- 10. Discuss concepts and principles relating to the fabrication of wrought wire/acrylic removable partial dentures
  - 10.1 Discuss general design requirements for wrought wire/acrylic removable partial dentures
  - 10.2 Discuss intra-oral and laboratory procedures for the diagnosis an planning of wrought wire/acrylic removable partial dentures, including sequencing with the dental laboratory during fabrication
  - 10.3 Discuss principles for surveying a master cast for wrought wire/acrylic removable partial dentures

- 10.4 Discuss design requirements for component parts of wrought wire/acrylic removable partial dentures
- 10.5 Discuss principles for fabricating wrought wire/acrylic removable partial dentures
- 11. Discuss the surveying technique, including tripodding and blockout.
  - 11.1 Describe the principles of surveying
  - 11.2 Discuss the principles of tripodding
  - 11.3 Describe blockout as it relates to surveying

**Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Introduction fo Partial Dentures, you will do the following:

- A. Complete a comprehensive examination which covers all of the learning outcomes.
- and
- B. Fabricate a custom impression tray—self curing acrylic.
- and
- C. Fabricate a custom impression tray—light cured acrylic
- and
- D. Fabricate maxillary and mandibular edentulous occlusal rims

**Course 1872 INTRODUCTION TO ORTHODONTICS 4.0 Credits**

This theory and laboratory course provides an introduction to skeletal and occlusal abnormalities and principles for orthodontic correction, as well as to the basic laboratory procedures relating to the fabrication of orthodontic study models, bending wires, clasps and bows as well as specific simple fixed and removable orthodontic appliances.

**Learning Outcomes**

- 1. Describe the dental specialty of Orthodontics, including basic concepts relating to orthodontic treatment.
  - 1.1 Define Orthodontic terminology
  - 1.2 Describe types of orthodontic appliances
  - 1.3 Discuss the history of orthodontic treatment
  - 1.4 Discuss the objectives of orthodontic treatment and treatment planning
  - 1.5 Discuss the phases of orthodontic treatment
- 2. Describe postnatal growth of the skull and jaws and the development of occlusion and malocclusion
  - 2.1 Recall knowledge of tooth development and eruption, characteristics and landmarks of deciduous and permanent dentition as discussed in Dental Anatomy and Morphology

- 2.2 Describe postnatal growth of the skull and jaws
- 2.3 Recognize the process for the development of occlusion
- 2.4 Recognize the skeletal factors which affect occlusal development
- 2.5 Describe and demonstrate cephalometric analysis
- 2.6 Recognize muscle factors that affect occlusal development
- 2.7 Recognize dental factors that affect occlusal development
- 2.8 Recognize localized factors affecting development of the occlusion
- 2.9 Identify types of malocclusion that may be treated by orthodontics.
- 3. Describe types of tooth movement and forces relating to tooth movement.
  - 3.1 Analyse the effects of applying various types and amount of force to the crown of a tooth
  - 3.2 Describe the types of tooth movement.
  - 3.3 Discuss the principles relating to the rotation of teeth.
  - 3.4 Recognize the necessity of tooth retention after active orthodontic treatment.
  - 3.5 Analyse the effects of applying various types and amount of force to the crown of a tooth
  - 3.6 Describe the types of tooth movement.
  - 3.7 Discuss the principles relating to the rotation of teeth.
  - 3.8 Recognize the necessity of tooth retention after active orthodontic treatment.
- 4. Describe mechanical principles of orthodontic appliances fabricated in this semester.
  - 4.1 Describe types of orthodontic appliances.
  - 4.2 Recognize and demonstrate the knowledge regarding the requirements of orthodontic appliances.
  - 4.3 Describe forces that influence tooth movement.
  - 4.4 Discuss anchorage as it applies to orthodontic appliances.
  - 4.5 Describe the mechanical action of various types of orthodontic appliances fabricated this semester.
- 5. Describe materials used in this semester for the fabrication of orthodontic appliances, including properties and principles for manipulation.
  - 5.1 Describe the properties and manipulation of impression materials and plaster used for the fabrication of orthodontic study models.
  - 5.2 Describe the properties and manipulation of stainless steel wire and bands used for the fabrication of orthodontic appliances.
  - 5.3 Describe the properties and manipulation of soldering and welding materials.
  - 5.4 Describe the properties and manipulation of material used for fabrication of a sports night guard.
  - 5.5 Describe the properties and manipulation of material used for fabrication of a soft night guard.
  - 5.6 Describe the properties and manipulation of acrylic resins used for the fabrication of a Hawley removable retainer
  - 5.7 Describe the properties and manipulation of material used for fabrication of a soft night guard.

- 5.6 Describe the properties and manipulation of acrylic resins used for the fabrication of a Hawley removable retainer
- 6. Demonstrate the safe use and maintenance of laboratory instruments and equipment used in this semester for the fabrication of orthodontic appliances.
  - 6.1 Demonstrate the safe use and maintenance of the orthodontic model trimmer
  - 6.2 Demonstrate the use and care of instruments used for wire, clasp and bow bending
  - 6.3 Demonstrate the safe use and maintenance of the vacuum former
  - 6.4 Demonstrate the safe use and maintenance of a multipurpose orthodontic welder (Great Lakes)
- 7. Demonstrate the principles and techniques relating to the preparation of orthodontic study models
  - 7.1 Recognize the importance of well prepared, accurate study casts
  - 7.2 Demonstrate the procedure and techniques for pouring and trimming orthodontic study models
  - 7.3 Demonstrate the principles for labelling and storing orthodontic study models.
- 8. Demonstrate the principles and techniques relating to the articulation of models using simple articulators
  - 8.1 Recognize the simple articulators that can be used for orthodontic appliances
  - 8.2 Demonstrate the procedure for mounting models using these simple articulators
- 9. Demonstrate the basic principles and techniques for wire, clasp and bow bending
  - 9.1 Recognize and demonstrate the fundamentals of wire bending
  - 9.2 Demonstrate the fundamentals of clasp and bow bending
- 10. Demonstrate the principles for soldering welding orthodontic components.
  - 10.1 Recognize and demonstrate the methods of joining stainless steel components
  - 10.2 Demonstrate the principles and techniques of soldering orthodontic
  - 10.3 Demonstrate the principles and procedures for welding orthodontic appliances
- 11. Demonstrate the principles for fabrication of a sports mouth guard using a vacuum former
  - 11.1 Recognize and demonstrate the principles of preparing the model for the production of a sports mouth guard
  - 11.2 Demonstrate the steps of fabrication the sports mouthguard using the vacuum former
  - 11.3 Demonstrate the steps of finishing the sports mouthguard
  - 11.4 Demonstrate the packaging of the mouthguard for delivery to the dental office

12. Demonstrate the principles for the fabrication of a soft night guard.
  - 12.1 Recognize and demonstrate the principles of preparing the model for the production of a soft night guard
  - 12.2 Demonstrate the steps of fabrication of the soft night guard
  - 12.3 Demonstrate the finishing steps for the soft night guard
  - 12.4 Demonstrate the packaging of the soft night guard for delivery to the dental office
13. Demonstrate the principles for fabrication of a fixed unilateral space maintainer
  - 13.1 Recognize and demonstrate the principles of preparing the model for the fabrication of a fixed unilateral space maintainer
  - 13.2 Demonstrate the steps of the fabrication of a fixed unilateral space maintainer
  - 13.3 Demonstrate the finishing steps for the fixed unilateral space maintainer
  - 13.4 Demonstrate the packaging of the unilateral space maintainer for delivery to the dental office.
14. Demonstrate the principles for fabrication of a simple Hawley removable retainer.
  - 14.1 Recognize and demonstrate the principles of preparing the model for the fabrication of a simple Hawley removable retainer
  - 14.2 Demonstrate the steps of the fabrication of a simple Hawley retainer
  - 14.3 Demonstrate the finishing steps for the simple Hawley retainer
  - 14.4 Demonstrate the packaging of the simple Hawley retainer for delivery to the dental office

**Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge, skills and attitudes in Introduction to Orthodontics, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.
- and
- B. Fabricate a soft night guard
- and
- C. Fabricate a fixed unilateral space maintainer
- and
- F. Fabricate a simple Hawley retainer

### III Semester Two Courses

#### **Course 2000          Dental Laboratory Science          0.5 Credits**

This course builds on information introduced in Semester One and focuses on occlusion, TMJ and occlusal function and dysfunction. Also included are the basic concepts of physics and chemistry as they pertain to dental prosthetics.

#### Learning Outcomes

1. Discuss static occlusal relationships and classifications.
  - 1.1 Recall occlusion terminology.
  - 1.2 State theories about occlusion.
  - 1.3 Discuss Angle=s classification of occlusion.
  - 1.4 Describe static occlusal relationships and malocclusions.
  - 1.5 Describe planes and terminology associated with occlusion.
2. Discuss functional occlusion and TMJ dysfunction.
  - 2.1 Describe signs and symptoms of occlusal dysfunction.
  - 2.2 Describe signs and symptoms of TMJ dysfunction.
  - 2.3 Discuss factors contributing to occlusal and TMJ dysfunction.
  - 2.4 Describe common treatments for occlusal dysfunction.
  - 2.5 Describe treatments for TMJ dysfunction.
  - 2.6 Discuss the role of the dental technician for preventing occlusal and TMJ dysfunction resulting from the fabrication of dental prostheses.
3. State basic concepts of chemistry as they pertain to the fabrication of dental/oral prostheses in the dental laboratory.
  - 3.1 State the reasons for studying chemistry as a dental technician.
  - 3.2 State subdivisions or specialty areas within the science of chemistry.
  - 3.3 State the composition and structure of matter.
  - 3.4 State basic concepts relating to chemical reactions.
4. State basic concepts of physics and their application to the fabrication of dental/oral prostheses in the dental laboratory.
  - 4.1 State the reason for studying physics as a dental technician.
  - 4.2 State the standards of measurement and measurement units.
  - 4.3 State basic concepts of energy.
  - 4.4 State basic concepts of matter.
  - 4.5 State concepts relating to common properties of matter.
  - 4.6 State concepts relating to mechanics and the mechanical properties of matter.
  - 4.7 State concepts relating to heat and their effects on materials.
  - 4.8 State concepts relating to light.
  - 4.9 State basic concepts relating to sound.
  - 4.10 State basic concepts relating to electricity and electrochemical corrosion.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge and skills in Dental Laboratory Science, you will to the following:

- A. Write a comprehensive exam based on all the learning outcomes.

### **Course 2001            Fundamentals of Oral Pathology            0.5 Credits**

This course is designed to introduce the student to the general principles of pathology. This will include the clinical signs and symptoms and the underlying cellular changes. Particular emphasis will be placed on pathologies of the oro-facial region. The course goal is recognition by the health care professional of the pathological states which can be found in the human organism when the harmony of form and function are disrupted.

#### **Learning Outcomes**

1. Describe the principles and terminology associated with the disease process.
2. Explain the concepts of differential diagnosis and clinical decision making strategies.
3. Analyze the histological and clinical aspects of common oral pathologies.
4. Explain the significance/impact of common oral pathologies on any dental treatment, and dental technology in particular.
5. Develop problem solving skills, utilizing diagnostic tools, techniques and procedures to aid in the identification of pathology.

#### **Topics Covered**

##### Principles of Pathology

- Major categories of disease
- Cellular aspects of pathology
- Pathogenesis of cell injury
- Cell necrosis
- Mechanisms of cell death
- Consequences of necrosis

##### Inflammation

- Damage control after tissue has been traumatized
- Categorizing the inflammatory response
- Acute inflammation

##### Regeneration and Repair

- Types of tissues
- Wound healing
- Fibrous scarring

##### Neoplasm

- Recognition of a cancer cell
- Basic characteristics of neoplasm

- Carcinogenesis (chemical factors of cancer)
- General characteristics of neoplasm
- Classification of neoplasms
- Significant features of precancerous conditions
- Biopsy

#### Development disturbances

- Disturbances of the face
- Disturbances of the tongue
- Disturbances of the jaw
- Disturbances of the teeth
- More common tooth anomalies

#### Skin and oral signs of disease

- Epithelial changes in disease: primary lesions (macule, papule, neoplasm, vesicles and bullae), secondary lesions
- Markers of disease (familial diseases, allergy, genetic disorders, metabolic and inflammatory diseases, diabetes, rheumatoid arthritis, infectious diseases, viral diseases, bacterial infections, neoplasms)

#### Infection Control

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge and skills in Fundamentals of Oral Pathology, you will do the following:

- A. Write a comprehensive exam based on all the learning outcomes

### **Course 2002                      Complete Dentures 1                                              4.0 Credits**

This theory and practice course builds on the knowledge and skills introduced in "Introduction to Complete Dentures" in Semester One. The focus of this course is related to denture maintenance and the role of the dental technician as it relates to the oral health of the complete denture patient. Foundation knowledge and skills related to the polishing and finishing, repairing, relining, and re-basing of complete dentures is introduced and practiced. Students will continue fabrication of complete dentures using 0 degree teeth.

#### Learning Outcomes

1. Discuss laboratory procedures and safety guidelines related to the use and maintenance of lab equipment and instruments used in this course.
  - 1.1 Recall knowledge of laboratory procedures and safety guidelines introduced in Semester One.
  - 1.2 Discuss guidelines for the safe use of the specific equipment used in this course (flask, air chisel, denture press, boil out tanks/acrylizer)
2. Discuss the properties of the dental materials used in this course, including principles of safety and manipulation.

- 2.1 Recall knowledge of the safe use and manipulation of materials that were introduced in Semester One and are used in this course.
- 2.2 Discuss materials used for denture maintenance.
- 2.3 State the guidelines for the manipulation of plastic and porcelain teeth during denture maintenance.
- 2.4 Discuss materials used to polish and finish dentures
3. Discuss oral health of the complete denture patient including the role of the dental technician for repairs that contribute to the patients oral health.
  - 3.1 State denture problems that may cause trauma to the tissues of a complete denture patient
  - 3.2 Describe methods of maintaining clean dentures
  - 3.3 Describe recommended intervals for denture patient oral examinations and denture checks
  - 3.4 Discuss the potential ill effects of some dental materials on the denture patients oral tissues.
  - 3.5 Discuss responsibilities of the dental technician for repairs that contribute to the oral health of the denture patient.
  - 3.6 Discuss the appropriate handling of dentures that are received from the dental office and the packaging of a denture that is being prepared to send to the dental office.
4. Discuss principles for repairing denture cracks and fractures and replacing teeth in dentures.
  - 4.1 Discuss the reasons that dentures may need repair
  - 4.2 Discuss principles for finishing and polishing repaired dentures
  - 4.3 Discuss principles for repairing denture cracks and fractures
  - 4.4 Discuss the principles for replacing teeth in dentures
  - 4.5 Perform denture repairs according to prescription
  - 4.6 Principles for finishing and polishing dentures
5. Discuss the principles for relining dentures
  - 5.1 Discuss reasons for relining dentures
  - 5.2 Discuss the responsibilities of the dentist as they relate to a dental technician relining a patients denture
  - 5.3 Discuss methods for relining dentures
  - 5.4 Discuss the process for relining dentures
  - 5.5 Reline a denture according to prescription
6. Discuss principles for rebasing dentures.
  - 6.1 Discuss reasons for rebasing dentures
  - 6.2 Discuss methods for rebasing dentures
  - 6.3 Discuss flasking procedure during rebasing
  - 6.4 Discuss guidelines for rebasing dentures
  - 6.5 Rebase a denture according to prescription
7. Discuss principles for fabricating complete dentures, including finishing and polishing.
  - 7.1 Recall knowledge of complete denture fabrication from Introduction to Complete Dentures in Semester One.
  - 7.2 Discuss principles of setting up with a fully adjustable articulator

- 7.3 Discuss principles of trimming and wax up of the finished denture
- 7.4 Fabricate, finish and polish, complete dentures according to prescription.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Complete Dentures 1, you will do the following:

A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.

and

B. Complete the following tasks:

- finishing and polishing dentures
- repair of denture cracks and fractures
- replace denture teeth
- reline complete dentures including the use of soft liners
- rebase complete dentures
- fabricate a "standard" complete denture - 0 degree teeth

### **Course 2003**

### **Partial Dentures 1**

### **4 Credits**

This course provides the theory and laboratory knowledge and practice to support the fabrication of wrought wire/acrylic removable partial dentures and cast metal removable partial dentures. As a continuation of Introduction to Partial Dentures in Semester One students will maintain their competency in the fabrication of various apparatuses.

### **Learning Outcomes**

1. Discuss the safe use and maintenance of dental laboratory materials used in this course.
  - 1.1 Recall knowledge about dental materials from Semester One as related to the fabrication of removable partial dentures
  - 1.2 Discuss abrasives used in this course
  - 1.3 Discuss chemicals used in this course
  - 1.4 Discuss metals used in this course
2. Discuss the safe use and maintenance of laboratory instruments and equipment used in this course.
  - 2.1 Recall guidelines for the safe use and maintenance of laboratory instruments and equipment used in Semester One as related to the fabrication of removable partial dentures
  - 2.2 Discuss guidelines for the safe use and maintenance of burn out ovens
  - 2.3 Discuss guidelines for the safe use and maintenance of high speed bench lathes
  - 2.4 Discuss guidelines for the safe use and maintenance of soldering equipment

- 2.5 Discuss guidelines for the safe use and maintenance of electrolytic polishers
- 2.6 Discuss the safe use and maintenance of hand instruments and tools used in this course.
3. Review concepts and principles related to the fabrication of wrought wire/acrylic removable partial dentures as practiced in Introduction to Partial Dentures.
  - 3.1 Recall general design requirements for wrought wire/acrylic removable partial dentures
  - 3.2 Recall intra-oral and laboratory procedures for the diagnosis and planning of wrought wire./acrylic removable partial dentures, including sequencing with the dental laboratory during fabrication.
  - 3.3 Practice principles for surveying a master cast for wrought wire/acrylic removable partial dentures
  - 3.4 Practice design requirements for component parts of wrought wire/acrylic removable partial dentures
  - 3.5 Practice principles for soldering component parts of the removable partial denture
  - 3.6 Practice principles for fabricating wrought wire/acrylic removable partial dentures.
4. Discuss concepts and principles for fabricating cast metal removable partial dentures, Classes I to IV, including cast clasps.
  - 4.1 Discuss general design requirements for cast metal removable partial dentures
  - 4.2 Discuss principles for surveying a master cast for cast metal removable partial dentures
  - 4.3 Discuss intra-oral and laboratory procedures for the diagnosis and planning of cast metal removable partial dentures, including sequencing with the dental laboratory during fabrication.
  - 4.4 Discuss the function and design requirements of cast clasps on removable partial dentures
  - 4.5 Discuss the function and design requirements of maxillary and mandibular major and minor connectors for cast metal removable partial dentures
  - 4.6 Discuss the function and design requirements of rests on cast metal removable partial dentures
  - 4.7 Discuss the function and design requirements of indirect retainers for cast metal removable partial dentures
  - 4.8 Discuss the function and design requirements of guiding planes and proximal plates for cast metal removable partial dentures
  - 4.9 Discuss metal design requirements for denture bases of cast metal removable partial dentures
  - 4.10 Discuss principles for fabricating cast metal removable partial dentures.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Partial Dentures 1, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.  
and
- B. In a laboratory setting, accurately and safely demonstrate the following within a specified period of time:
  - Fabricate cast metal removable partial dentures (Class I to IV)

### **Course 2004                      Orthodontics 1                                              4.0 Credits**

The theoretical knowledge and supportive laboratory skills related to the fabrication of simple fixed and removable orthodontic appliances, and their repair, will be introduced and practiced. The fabrication of removable Hawley retainers, removable appliances with bite planes, fixed unilateral space maintainers, bilateral space maintainers, night guards, bleaching trays, Essix retainers and simple repairs of orthodontic appliances are the foundation of the theory and applied laboratory practice of this course.

#### **Learning Outcomes**

1. Discuss the chemical and physical properties of the dental materials used in this course including the principles of handling and manipulation.
  - 1.1 Discuss the properties and manipulation of stainless steel wire used for the fabrication of orthodontic appliances.
  - 1.2 Discuss the properties and manipulation of acrylic resins as they related to the fabrication of orthodontic appliances.
  - 1.3 Discuss the safe use of acrylic resins
  - 1.4 Discuss the properties and manipulation of the vacuum formed material used in fabrication of the invisible retainer
  - 1.5 Practice safe and correct handling and manipulation of the materials used in this course.
  - 1.6 Describe the handling of the orthodontic cases received from the dental offices and the packaging of the appliance in preparation for delivery to the dental office.
2. Discuss the safe use and maintenance of equipment and instruments used in this course.
  - 2.1 Discuss the use and maintenance of the instruments used in this course.
  - 2.2 Discuss the use and maintenance of the lab equipment used in this course
    - Orthodontic welder
    - vacuumformer
    - pressure pots
    - other

- 2.3 Demonstrate safe use and maintenance of lab equipment and instruments.
3. Discuss the principles of using articulators/verticulators for setting up orthodontic cases being fabricated in this course.
  - 3.1 Discuss the purpose of using the articulator/verticulator
  - 3.2 Discuss the principles of setting up orthodontic cases on an articulator/verticulator
  - 3.3 Practice setting up the articulator/verticulator
4. Discuss the basic concepts related to the fabrication of removable Hawley retainers.
  - 4.1 Discuss the advantages and disadvantages of removable appliances as compared to fixed appliances.
  - 4.2 Discuss the purpose of the Hawley retainer
  - 4.3 Describe the design of the removable Hawley retainer.
  - 4.4 Discuss the principles, design and fabrication of labial bows
  - 4.5 Discuss the principles, design and fabrication of finger springs
  - 4.6 Discuss the principles, design and fabrication of occlusal rests
  - 4.7 Describe the steps of fabricating a removable Hawley retainer including the finishing/polishing of the appliance
  - 4.8 Fabricate the prescribed Hawley retainer.
5. Discuss the concepts related to the fabrication of removable appliances with anterior and posterior bite planes.
  - 5.1 Discuss the purpose of the removable appliance with:
    - an anterior bite plane
    - a posterior bite plane
  - 5.2 Discuss the design of the removable appliance with:
    - an anterior bite plane
    - a posterior bite plane
  - 5.3 Describe the steps of fabricating the removable appliance with:
    - an anterior bite plane
    - a posterior bite plane
  - 5.4 Fabricate prescribed removable appliances with:
    - an anterior bite plane
    - a posterior bite plane
6. Discuss the concepts related to the fabrication of unilateral space maintainers
  - 6.1 Discuss the purpose of space maintainers
  - 6.2 Discuss the types of unilateral space maintainers
  - 6.3 Discuss the design of unilateral space maintainers
  - 6.4 Describe the steps of fabricating a unilateral space maintainer including the finishing and polishing of the appliance.
  - 6.5 Fabricate the prescribed unilateral space maintainers
7. Discuss the concepts related to the fabrication of hard night guards
  - 7.1 Describe the purpose of hard night guards
  - 7.2 Describe the design of the hard night guard
  - 7.3 Describe the steps of fabricating a hard night guard including the finishing and polishing of the appliance.

- 7.4 Fabricate prescribed simple hard night guards
  
- 8. Discuss the concepts related to the fabrication of bleaching trays
  - 8.1 Discuss the purpose of bleaching trays.
  - 8.2 Describe the design of bleaching trays
  - 8.3 Describe the steps of fabricating bleaching trays including the finishing and polishing of this appliance
  - 8.4 Fabricate prescribed bleaching trays
- 9. Discuss the concepts related to the fabrication of an invisible retainer
  - 9.1 Discuss the purpose of the invisible retainer
  - 9.2 Describe the design of the invisible retainer
  - 9.3 Describe the steps of fabrication of the invisible retainer including the finishing and polishing of this appliance
  - 9.4 Fabricate the prescribed invisible retainer
- 10. Discuss the concepts related to the fabrication of bilateral space maintainers.
  - 10.1 Discuss the purpose of bilateral space maintainers
  - 10.2 Describe the design of bilateral space maintainers
  - 10.3 Describe the steps of fabricating a bilateral space maintainer including the finishing and polishing of this appliance.
  - 10.4 Fabricate the prescribed bilateral space maintainers
- 11. Discuss the concepts related to the repairs of appliances.
  - 11.1 Discuss the types of repairs that may be required.
  - 11.2 Describe the steps of repairing broken wire/metal components of orthodontic appliances.
  - 11.3 Describe the steps of repairing the acrylic components of orthodontic appliances
  - 11.4 Repair the wire/metal and the acrylic components of prescribed orthodontic appliances.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Orthodontics 1, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes
- and
- B. Fabricate a removable appliance with an anterior bite-plane.
- and
- C. Fabricate a hard acrylic splint
- and
- D. Fabricate a retainer with a soldered labial bow.

**Course 2005                      Introduction to Fixed Prosthodontics                      6.0 Credits**

Foundation knowledge and supportive laboratory skills related to the fabrication of single unit metal restorations is introduced and practiced. The knowledge, skills and attitudes that are required during dental technology practice of: preparing and trimming master casts, producing custom trays, articulating casts using semi-adjustable articulators, fabrication of single unit metal restorations, and the repair of restoration are the foundation of the theory and applied laboratory practice of this course.

Learning Outcomes

1. Discuss basic concepts relating to the fabrication of fixed prosthetics.
  - 1.1 Define terminology relating to fixed prosthodontics
  - 1.2 Discuss the history of fixed prosthetics
  - 1.3 State materials used for fixed restorations
  - 1.4 Describe the types of fixed restorations
  - 1.5 Describe the differences between a removable partial dentures and a fixed bridge.
  - 1.6 Describe the two general methods for restoring teeth with gold
  - 1.7 Discuss clinical and laboratory procedures for the diagnosis, planning and fabrication of fixed restorations, including sequencing with the dental laboratory
  - 1.8 State basic principles for tooth preparation as they relate to fixed prosthetics.
2. Discuss principles of occlusion and articulation as they relate to fixed restorations.
  - 2.1 Relate knowledge of occlusion and articulation learned in Semester One
  - 2.2 Discuss concepts relating to centric occlusion contact.
  - 2.3 Discuss principles for relating opposing tooth surfaces to the working cast using occlusal cores
  - 2.4 Discuss principles of articulation as they relate to fixed prosthetics.
  - 2.5 Discuss principles and concepts of eccentric contact.
3. Discuss materials used for the fabrication of fixed metal restorations, including composition and principles for manipulation and safety.
  - 3.1 Recall knowledge of dental materials used in Semester One
  - 3.2 Discuss measurement units for weight
  - 3.3 Discuss materials used for casts and dies
  - 3.4 Discuss waxes used for the fabrication of fixed restorations
  - 3.5 Discuss investment materials used for the fabrication of fixed restorations
  - 3.6 Discuss metals and metal alloys used for fixed restorations.
  - 3.7 Discuss fluxes, acids and pickling solutions used for the fabrication of fixed restorations, including their composition and manipulation.
  - 3.8 Discuss expansion liners, die lubricants, wetting agents, cement spacers, and seating indicators, including their use for the fabrication of fixed restorations.
  - 3.9 Discuss abrasives and polishing agents used for fixed restorations.

4. Discuss the safe use and maintenance of laboratory instruments and equipment used for the fabrication of fixed restorations.
  - 4.1 Recall knowledge about the safe use and maintenance of instruments and lab equipment used in Semester One
  - 4.2 Discuss the safe use and maintenance of equipment used to mix casting investments.
  - 4.3 Discuss the use and maintenance of a parallel pinning machine
  - 4.4 Discuss heat producing equipment that is used for the fabrication of fixed restorations.
  - 4.5 Discuss the use of crucibles for fixed restorative techniques.
  - 4.6 Discuss the safe use and maintenance of burnout furnaces used for the fabrication of fixed restorations
  - 4.7 Discuss the safe use and maintenance of casting machines
  - 4.8 Discuss the safe use and maintenance of air abrasive blasters and their venting system
  - 4.9 Discuss the safe use and maintenance of the handpiece
  - 4.10 Discuss the safe use and maintenance of the face bow
  - 4.11 Discuss the safe use and maintenance of the polishing unit
5. Discuss custom trays and the principles for fabrication using various methods and materials
  - 5.1 Recall knowledge related to methods and materials for custom tray fabrication from Semester One
  - 5.2 Discuss general principles for fabricating acrylic/shellac/vacuum formed custom trays for final impressions for fixed restorations.
  - 5.3 Fabricate prescribed custom trays.
6. Discuss aesthetics, form and function as they relate to the fabrication of fixed restorations.
  - 6.1 Discuss tooth contour and its influence on the aesthetic value, form and function of fixed prosthodontic restorations.
  - 6.2 Discuss gingival margin preparations and their influence on the fabrication of fixed restorations.
7. Discuss the principles for using articulators for setting up the casts for fixed restorations.
  - 7.1 Identify the types of articulators that can be used during the fabrication of fixed restorations
  - 7.2 Identify the parts of the Pro Arch 3 Articulator
  - 7.3 Describe the principles for setting up this articulator in preparation for fabrication of fixed metal restorations.
  - 7.4 Discuss the types of facebows that can be used with the articulator
  - 7.5 Describe the use of the facebow in the laboratory during the fabrication of fixed restorations.
8. Discuss principles and techniques relating to the fabrication of single unit fixed restorations.
  - 8.1 Discuss principles relating to the construction of working casts used for the fabrication of fixed restorations

- 8.2 Discuss principles for constructing die models for single metal crowns using various techniques
- 8.3 Discuss principles for preparing dies for the fabrication of single metal crowns.
- 8.4 Discuss principles for fabricating a wax patterns for a single metal crown
- 8.5 Discuss principles related to spruing a wax pattern for a single unit metal crown
- 8.6 Discuss principles related to investing wax patterns for single unit metal crowns
- 8.7 Discuss principles related to burning out a wax pattern
- 8.8 Discuss principles related to casting fixed prosthodontic restorations with gold.
- 8.9 Discuss principles for recovering and cleaning a gold casting
- 8.10 Discuss principles for trimming, fitting and polishing a single unit gold restoration
- 8.11 Discuss the principles for preparing the single unit metal restoration for delivery to the dental office.
- 8.12 Fabricate prescribed single unit metal restorations.
- 9. Discuss metal post crowns, including principles relating to their design and fabrication
  - 9.1 Describe post crowns
  - 9.2 Discuss design features of post crowns
  - 9.3 Discuss the principles for fabricating post crowns
  - 9.4 Fabricate prescribed post metal crowns
- 10. Discuss principles for correcting and repairing single unit metal restorations by soldering gold alloys.
  - 10.1 Recall knowledge about materials used to solder metal alloys
  - 10.2 State corrections and repairs that may be needed for single unit metal restorations.
  - 10.3 Discuss principles and techniques for repairing deficient proximal contacts
  - 10.4 Discuss principles and techniques for supplementing a cusp
  - 10.5 Discuss principles and techniques for repairing holes in the occlusal surface of metal restorations
  - 10.6 Discuss principles and techniques for repairing marginal defects of metal restorations.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge and skills in Introduction to Fixed Prosthodontics, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes and

- B. Pour, trim and mount upper and lower C&B models with a split cast mounting technique.  
and
- C. Prepare an upper and lower model and die work using by the PINDEX system.  
and
- D. Fabricate and upper and lower C&B special tray.  
and
- E. Complete and esthetic waxing up (full anatomical) of anterior and posterior crowns.  
and
- F. Complete a waxing up of #36 and #16 crowns using the PKT technique.

## IV Semester Three Courses

### **Course 3001      Complete Dentures 2      3.5 Credits**

This theory and practical course is a continuation of Introduction to Complete Dentures and Complete Dentures 1. Fabrication of complete dentures includes mounting casts on articulators, selecting and arranging teeth, waxing up, investing, processing and finishing techniques. Various types of complete dentures and an increase of the degrees of difficulty will be included in this course. Maintenance of previously achieved laboratory skills will be expected.

#### Learning Outcomes

1. Discuss the laboratory procedures and safety guidelines related to the use and maintenance of lab equipment and instruments used in this course.
  - 1.1 Recall knowledge of laboratory procedures and guidelines introduced in Semesters one and two.
  - 1.2 Practice safe use and maintenance of all equipment and instruments used while performing the practical objectives of this course.
2. Discuss the properties of the dental materials used in this course, including principles of safety and manipulation.
  - 2.1 Recall knowledge of the safe use and manipulation of the materials that are used in this course.
  - 2.2 Safely use and manipulate material while performing the practical objectives of this course.
3. Discuss the use of the ProTar 3 articulator.
  - 3.1 Identify the parts of the ProTar 3 articulator
  - 3.2 Explain the actions of the ProTar 3 articulator
  - 3.3. Describe the used of the ProTar 3 articulator
  - 3.4 Wax up the complete denture case using the ProTar 3 articulator
4. Discuss the various facebows and earbows that are used with articulators during the fabrication of complete dentures.
  - 4.1 Identify the types of facebows that can be used with the articulator
  - 4.2 Describe the use of the facebow with the patient and the resulting use in the lab.
  - 4.3 Identify the various types of earbows
  - 4.4 Describe the use of the earbows with the patient and the resulting use in the lab.
5. Review the stages of denture fabrication from the time that the impression is received in the laboratory to the delivery of the prosthesis, including critiquing, problem solving and infection control
  - 5.1 Identify the steps involved for fabrication of a complete denture including what occurs in the dental office, what is received by the laboratory, what the prescription would say and what the lab produces and returns to the dental office.
  - 5.2 Identify the infection control procedures that would be followed for each of the above steps
6. Discuss the principles of fabrication of a complete denture with 20 degree teeth

- 6.1 Recall the principles for mounting and articulating cases for the fabrication of complete dentures
- 6.2 Discuss the principles of esthetics, form and function related to the selection of the artificial teeth
- 6.3 Discuss the principles for the arrangement of the artificial teeth.
- 6.4 Fabricate complete dentures with 20 degree teeth
7. Discuss the principles of fabrication of a complete denture with 30 degree teeth.
  - 7.1 Discuss the principles of esthetics, form and function related to the selection of the artificial teeth
  - 7.2 Discuss the principles for the arrangements of the artificial teeth
  - 7.3 Fabricate complete dentures with 30 degree teeth
8. Discuss the principles for fabricating complete dentures for patients with Class II and Class III occlusion.
  - 8.1 Review Class I, Class II and Class III occlusion
  - 8.2 Discuss modifications necessary to the fabrication of complete dentures for patients with Class II and Class III occlusion
  - 8.3 Fabricate Class II and Class III complete dentures

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Complete Dentures 2, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes and
- B. In a laboratory setting, demonstrate accurately and safely and within a specified amount of time, the following:
  - complete dentures 20 degree teeth
  - complete denture with 30 degree teeth
  - complete dentures with Class II occlusion
  - complete dentures with Class III occlusion

### **Course 3002                      Partial Dentures 2                                              4.5 Credits**

This course is a continuation of Introduction to Partial Dentures and Partial Dentures 1. Students will fabricate cast metal partial dentures as prescribed to a given variety of situations and degrees of difficulty. Maxillofacial prostheses will be discussed, including the fabrication of an obturator. The use of semi-adjustable articulators, facebows/earbows, and shades and moulds will be integrated into this component of learning. Maintenance of previously attained skills will be expected.

### **Learning Outcomes**

1. Discuss the safe use and maintenance of laboratory equipment and instruments used in this course.

- 1.1 Recall guidelines for the safe use and maintenance of laboratory instruments and equipment introduced in Semesters one and two.
- 1.2 Practice safety and maintenance when performing laboratory procedures.
2. Describe the materials used in this course, including principles for safe handling and manipulation.
  - 2.1 Recall knowledge from semesters one and two as related to the fabrication of removable partial dentures.
  - 2.2 Practice safe handling and manipulation of materials during laboratory practice.
3. Discuss the use of the ProTar 3 articulator.
  - 3.1 Identify the parts of the ProTar 3 articulator
  - 3.2 Explain the actions of the ProTar 3 articulator
  - 3.3 Describe the use of the ProTar 3 articulator
  - 3.4 Fabricate removable partial dentures using the ProTar 3 articulator
4. Describe the use of facebows and earbows during the fabrication of partial dentures.
  - 4.1 Identify the types of facebows that can be used with the articulator
  - 4.2 Describe the use of the facebow with the patient and the resulting use in the lab.
  - 4.3 Identify the types of earbows
  - 4.4 Describe the use of the earbows with the patients and the resulting use in the lab.
5. Discuss the rotational path of insertion of removable partial dentures including principles of application.
  - 5.1 Define rotational path of insertion
  - 5.2 Describe types of rotational paths and categories of rotational path Designs
  - 5.3 Describe design construction for rotational path removable partial dentures, including advantages and disadvantages
  - 5.4 Describe principles and procedures for fabrication of rotational path removable partial dentures
  - 5.5 Explain factors to be considered when using the rotational path of insertion for removable partial dentures.
6. Fabricate cast metal removable partial dentures.
  - 6.1 Recall knowledge of fabricating cast metal removable partial dentures from Semester two.
  - 6.2 Discuss the process of using the split cast technique for fabrication of cast metal removable partial dentures.
  - 6.3 Given various prescriptions, fabricate cast metal removable partial dentures
6. Describe maxillofacial dental prostheses, including the process of fabricating an obturator.
  - 7.1 State some health conditions that may necessitate the fabrication of maxillafacial prostheses.
  - 7.2 Describe factors that affect the treatment of patients with maxillary or

- mandibular oral defects
- 7.3 Describe the function of maxillofacial prostheses
- 7.4 Describe a cleft lip and palate defect, including principles relating to the fabrication of an obturator
- 7.5 Describe maintenance requirements and procedures for maxillofacial prostheses

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Partial Dentures 2, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.
- and
- B. Fabricate cast metal removable partial dentures

### **Course 3003                      Orthodontics 2                                              3.0 Credits**

As a continuation of Introduction to Orthodontics and Orthodontics 1, students will fabricate complex fixed and removable orthodontic appliances as prescribed. This course expands upon the theory base of the previous semesters and will enhance the students ability to design appliances, problem solve and self evaluate. Maintenance of the previously achieved orthodontic competencies will be expected.

### **Learning Outcomes**

1. Discuss laboratory procedures and guidelines related to the use and maintenance of laboratory equipment and instruments used in this course.
  - 1.1 Recall knowledge related to the safe use and maintenance of equipment and instruments used in Semesters one and two.
  - 1.2 Discuss the safe use and maintenance of instruments and equipment introduced in this course.
  - 1.3 Demonstrate the safe use and maintenance of the equipment and instruments used during orthodontic practice in this semester.
2. Discuss the properties of the dental materials used in this course, including principles of safety and manipulation.
  - 2.1 Recall knowledge related to the dental materials used in Semesters one and two.
  - 2.2 Safely use and manipulate dental materials used for the fabrication of orthodontic appliances introduced this semester.
  - 2.3 Recall the procedure for handling orthodontic cases received from the dental office and the procedure of packaging the appliance for delivery to the dental office.
3. Discuss the principles for treatment of various occlusal relationships, including orthodontic techniques.
  - 3.1 Recall knowledge of classifications of occlusal relationships

- 3.2 Discuss principles of treatment and orthodontic techniques for Class I occlusal relationships
- 3.3 Discuss principles of treatment and orthodontic techniques for Class II occlusal relationships
- 3.4 Discuss principles of treatment and orthodontic techniques for Class III occlusal relationships.
- 4. Discuss components of fixed orthodontic appliances, including principles relating to their application during orthodontic treatment.
  - 4.1 Discuss archwires and their application during orthodontic treatment
  - 4.2 Discuss the use of bands for orthodontic treatment
  - 4.3 Discuss the use of brackets for orthodontic treatment
- 5. Discuss habit appliances that may be required as orthodontic treatment.
  - 5.1 State the types of habits and their potential effect on occlusion.
  - 5.2 Identify the types of appliances that could be fabricated to address occlusion problems that have occurred due to habits.
  - 5.3 Describe the steps of fabricating habit appliances
  - 5.4 Fabricate habit appliances as prescribed.
- 6. Identify types of complex removable retainers and their procedures for fabrication.
  - 6.1 Describe the types of complex removable retainers.
  - 6.2 Describe the steps of fabrication of complex removable retainers
  - 6.3 Fabricate complex removable retainers as prescribed.
- 7. Identify types of complex night guards including their procedures for fabrication.
  - 7.1 Describe the types of complex night guards
  - 7.2 Describe the steps of fabrication of complex night guards
  - 7.3 Fabricate complex night guards as prescribed
- 8. Identify types of expansion appliances and their procedure for fabrication.
  - 8.1 Describe the types of expansion appliances
  - 8.2 Describe the steps of fabrication of expansion appliances
  - 8.3 Fabricate expansion appliances as prescribed
- 9. Identify sagittal appliances and their procedures for fabrication
  - 9.1 Describe the types of sagittal appliances
  - 9.2 Describe the steps of fabrication of sagittal appliances
  - 9.3 Fabricate sagittal appliances as prescribed
- 10. Identify the steps of fabrication of a bilateral Nance space maintainer.
  - 10.1 Describe the types of springs used with a bilateral space maintainer.
  - 10.2 Describe the steps of fabrication of a bilateral Nance space maintainer
  - 10.3 Fabricate bilateral Nance space maintainers as prescribed.
- 11. Identify the types of cross bite appliances and their procedures for fabrication
  - 11.1 Describe the types of cross bite appliances
  - 11.2 Describe the steps for fabrication of cross bite appliances
  - 11.3 Fabricate crossbite appliances as prescribed.

12. Discuss the procedural steps for fabrication of a heat cured night guard
  - 12.1 Recall knowledge related to the purpose of night guards
  - 12.2 Describe the steps of fabricating a heat cured night guard
  - 12.3 Fabricate a heat cured night guard as prescribed.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Orthodontics 2, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.  
and
- B. Fabricate one Schwarz expansion appliance  
and
- C. Fabricate one anti thumb-sucking appliance  
and
- D. Fabricate one heat-cured splint

### **Course 3004                  Fixed Prosthodontics                  7.5 Credits**

As a continuation of “Introduction to Fixed Prosthodontics”, students will fabricate single unit metal restorations as prescribed. Included is the introduction to dental ceramics including characteristics and composition of porcelain, esthetics, color and shading, and the manipulation and firing of porcelain. Fabrication of single unit ceramo-metal restorations and the correction of dental porcelain and metal defects and faults will be practiced. This course expands upon the theory base of the previous semesters and will enhance the students ability to design, critique and self evaluate their laboratory prostheses. Maintenance of the previously achieved competencies will be expected.

### **Learning Outcomes**

1. Apply laboratory procedures and guidelines related to the use and maintenance of lab equipment and instruments used in this course.
  - 1.1 Recall knowledge related to the safe use and maintenance of equipment and instruments used in semester two
  - 1.2 Identify the safe use and maintenance of equipment and instruments introduced for use in this semester
  - 1.3 Safely use and maintain all equipment and instruments used during fixed prosthodontic practice in this semester.
2. Discuss the properties of the dental materials used for the fabrication of fixed restorations, including principles of safety and manipulation.
  - 2.1 Recall knowledge of dental materials used in semester two
  - 2.2 Discuss types of materials used for inlays, onlays and partial crowns
  - 2.3 Discuss types of materials used for ceramo/metal restorations
  - 2.4 Discuss the effects of ceramo/metal restorative materials on the oral tissues
3. Practice the principles and perform the techniques relating to the fabrication of using single unit fixed metal restorations, including temporary crowns.

- 3.1 Discuss the principles relating to the construction of working casts used for the fabrication of fixed restorations
- 3.2 Discuss principles for constructing die models for single metal crowns using various techniques
- 3.3 Discuss principles for preparing dies for the fabrication of single metal crown
- 3.4 Discuss principles for mounting and articulating casts for fixed prosthodontic techniques
- 3.5 Discuss principles for fabricating a wax pattern for a single metal crowns
- 3.6 Discuss principles related to siruping a wax pattern for a single unit metal crown.
- 3.7 Discuss principles related to investing wax patterns for single unit metal crowns.
- 3.8 Discuss principles related to burning out a wax pattern
- 3.9 Discuss principles related to casting fixed Prosthodontic restorations with gold alloys
- 3.10 Discuss principles for recovering and cleaning a gold casting
- 3.11 Discuss principles for trimming, firing and polishing a single unit gold restoration.
- 3.12 Discuss the reasons that a temporary crown is required.
- 3.13 Discuss the various methods of provisional coverage.
- 3.14 Describe the principles of fabricating temporary crowns
- 3.15 Fabricate single unit metal restorations and temporary crowns as prescribed.
4. Describe and practice the principles for correcting and repairing single unit metal restorations by soldering gold alloys
  - 4.1 Recall knowledge regarding materials used to solder metal alloys
  - 4.2 State corrections and repairs that may be needed for single unit metal restorations.
  - 4.3 Describe the principles and practice the techniques for repairing deficient proximal contacts
  - 4.4 Describe the principles and practice the techniques for supplementing a cusp
  - 4.5 Describe the principles and practice the technique for repairing holes in the occlusal surface of metal restorations.
  - 4.6 Describe the principles and practice the techniques for repairing marginal defects of metal restorations.
5. Describe metal post crowns, including principles relating to their design and fabrication.
  - 5.1 Describe post crowns
  - 5.2 Describe design features of post crowns
  - 5.3 Describe the principles for fabricating post metal crowns
  - 5.4 Fabricate post metal crowns as prescribed
6. Describe inlays, onlays and partial crowns, including principles relating to their fabrication
  - 6.1 Discuss inlays and onlays, including modifications to single unit metal crown techniques that are required for their fabrication
  - 6.2 Discuss partial crowns, including principles relating to their fabrication

- 6.3 Fabricate inlays, onlays and partial crowns as prescribed
- 7. Describe basic concepts relating to the fabrication of resin/metal and ceramo / metal restorations.
  - 7.1 Define terminology related to dental ceramics
  - 7.2 Discuss the history of porcelain in dentistry
  - 7.3 State the major objectives of ceramics in restorative dentistry.
  - 7.4 Describe types of resin/metal and ceramo/metal crowns.
  - 7.5 Discuss the advantages and disadvantages of resin/metal and ceramo/metal crowns.
  - 7.6 Discuss intraoral and laboratory procedures for the diagnosis and planning of ceramo/metal crowns, including sequencing with the dental laboratory during fabrication
- 8. Practice the principles of occlusion and articulation as they relate to the fabrication of ceramo/metal restorations.
  - 8.1 Recall principles of occlusion and articulation as they relate to fixed restorations
  - 8.2 Recall knowledge of trauma which may result from malocclusion of teeth
  - 8.3 Discuss design requirements of occlusal porcelain
  - 8.4 Discuss the distribution of occlusal loads on ceramo/metal restorations.
- 9. Determine the esthetics, form and function of ceramo/metal restorations, including the application of concepts relating to the science of light and colour.
  - 9.1 Recall knowledge of esthetics, form and function from semester two.
  - 9.2 Discuss esthetic design requirements of ceramo/metal restorations
  - 9.3 Recall concepts relating to the science of light and color from Semester two.
  - 9.4 Discuss the application principles of light and colour to the shading and staining of dental porcelain
  - 9.5 Discuss principles for matching porcelain shades with natural teeth in the dental laboratory
- 10. Practice the principles and techniques relating to the fabrication of ceramo/metal restorations.
  - 10.1 Recall knowledge about fabrication principles and techniques for single metal restorations.
  - 10.2 Discuss modifications to single unit metal restoration techniques that are required for the fabrication of the cast metal framework for single unit ceramo/metal restorations.
  - 10.3 Discuss principles relating to the preparation of the metal interface for a ceramo/metal restoration
  - 10.4 Discuss principles related to opaquing and firing opaqued ceramo/metal alloys
  - 10.5 Discuss principles related to packing and sculpturing porcelain for single ceramo/metal restorations.
  - 10.6 Discuss principles related to firing, trimming, and contouring porcelain
  - 10.7 Discuss principles and techniques for custom characterization of porcelain using colour, shading and staining.
  - 10.8 Discuss principles for glazing porcelain

- 10.9 Discuss principles for polishing and cleaning finished ceramo/metal restorations
- 10.10 Fabricate ceramo/metal restorations as prescribed.
- 11. Discover the problems that may occur with dental porcelain, including causes and techniques for preventing and correcting faults.
  - 11.1 Discuss surface defects and faults that may occur in porcelain
  - 11.2 Discuss problems and defects with porcelain colour
  - 11.3 Discuss problems with the soundness of porcelain
  - 11.4 Discuss problems with bonding and fusion during the fabrication of ceramo/metal restorations

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Fixed Prosthodontics, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.  
and
- B. Fabricate an upper temporary bridge by cold cured acrylic resin  
and
- C. Fabricate an upper and lower full gold crown ready for delivery  
and
- D. Fabricate inlay and onlay ready for delivery  
and
- E. Fabricate composite inlay, onlay,  $\frac{3}{4}$  crown and full crown ready for delivery.

## **V Semester Four Courses**

### **Course 4000      Business Management      1.5 Credit**

This course provides an introduction to basic concepts of business and the business aspects of a dental laboratory as they relate to being an employee and a laboratory owner or manager. It builds upon this knowledge with information about personal, market and business factors that affect the success of a dental laboratory business. The course begins with the basic concepts of business management including profit, loss, and a method for costing production, as well as employee management and relations, and the concepts of marketing. It continues by focussing on the dental technician as a business owner. Students explore personal and market factors that affect a successful business, and discuss components of a business plan. In addition, students discuss information relating to Dental Laboratory ownership and current professional issues.

#### Learning Outcomes

1. Discuss cost and loss factors associated with production in the dental technician industry.
  - 1.1 Recall knowledge about time management including its importance in the dental technician industry.
  - 1.2 Discuss general costs associated with operating a dental laboratory.
  - 1.3 Discuss ways in which losses are minimized
  - 1.4 Discuss factors affecting production of a dental technician
  - 1.5 Discuss relationships between production, loss and profit for a dental laboratory owner.
2. Discuss the importance, as a dental technician employee, of knowing the costs of your production, including a method for costing production.
  - 2.1 Discuss a method for costing production
  - 2.2 Discuss the advantages and disadvantages of the employee knowing their own cost of production.
  - 2.3 Discuss the advantage to the dental laboratory owner knowing the cost of an employee's production.
3. Discuss concepts relating to the management of employees in a small business.
  - 3.1 Discuss terms associated with group dynamics
  - 3.2 Describe common leadership/management styles.
  - 3.3 Discuss, as an employee at any previous job, management characteristics that resulted in enjoyable, productive employment.
  - 3.4 Discuss, as a potential manager or business owner, ways of balancing production and profit with a pleasant, professional work environment.
  - 3.5 Discuss employee appraisal and review counselling.
  - 3.6 Discuss the purpose and procedures for a staff meeting
  - 3.7 Discuss recommending changes in the workplace, as a dental lab employee, and strategies for implementation.

- 3.8 Describe the benefits and limitations of an Employee Handbook, or workplace Policies and Procedures Manual.
4. Discuss factors that affect employee/employer relations in a small business.
  - 4.1 Discuss characteristics of a successful new employee
  - 4.2 Discuss ways of establishing a good working relationship with a supervisor/manager
  - 4.3 Discuss ways of establishing a good working relationship with colleagues.
5. Explain concepts of marketing and their application to the dental laboratory industry.
  - 5.1 Define marketing
  - 5.2 Discuss the purpose of marketing
  - 5.3 Describe traditional marketing techniques, including their advantages and disadvantages.
  - 5.4 Describe aggressive marketing techniques, including their advantages and disadvantages.
  - 5.5 Discuss ways of maintaining good customer relations.
  - 5.6 Explain legal and ethical issues related to marketing
  - 5.7 List marketing techniques that you, as a dental lab employee, think would be appropriate and effective for the dental laboratory industry.
6. Discuss socio-demographic trends and their influence on business.
  - 6.1 Discuss the importance of recognizing trends.
  - 6.2 Discuss major North American trends and some general business implications of each.
  - 6.3 Discuss major trends in North American dental oral health and health care, and the possible implications for the dental technician industry.
  - 6.4 Discuss future trends that are likely to occur in North America and their implications for owners of dental laboratories.
7. Discuss the market segment of all areas of dental technology and the implications for a successful dental laboratory business.
  - 7.1 Identify characteristics of the dental laboratory specialty market segment.
  - 7.2 Identify factors affecting profit in the dental laboratory specialty areas.
  - 7.3 Discuss demographic and statistical information about a potential location that is helpful when considering establishment of a dental laboratory business.
  - 7.5 Identify sources for demographic and statistical information and the information that is available.
  - 7.5 Discuss the relationship between demographic and statistical information and the specialty area market segment.

- 7.6 Using demographic and statistical information about a fictitious town/area, estimate the potential success for a dental laboratory business in each of the four dental technician specialty areas.
8. Discuss personal factors to consider when contemplating becoming a business owner.
  - 8.1 Discuss characteristics of successful small business owners.
  - 8.2 Compare personal information obtained from a Entrepreneurship Self-Assessment Profile to characteristics of successful small business owners.
  - 8.3 Discuss how business skills are acquired or learned.
  - 8.4 Discuss business skills that are needed for small business ownership.
  - 8.5 Compare personal information obtained from a Business Skills Inventory to business skills needed by business owners.
  - 8.6 Discuss the importance of a support system for small business owners, including sources for support.
  - 8.7 Discuss financial considerations for becoming a small business owner.
9. Discuss planning needed to prepare for small business ownership, including components of a business plan.
  - 9.1 Describe types of business ownership and the advantages and disadvantages of each.
  - 9.2 Describe types of licenses and permits required for Dental Laboratory ownership in B.C. including suggested insurance coverage.
  - 9.3 Discuss preliminary financial planning for starting a small business.
  - 9.4 Discuss components of a business plan.
10. Describe basic financial concepts of self-employment.
  - 10.1 Describe basic financial difference between being an employee and being self-employed including the advantages and disadvantages of self-employment.
  - 10.2 Describe deductions available for self-employed business people.
  - 10.3 State the requirements of GST registration and the effect of GST on a dental laboratory owner.
  - 10.4 State general rules for income tax payment.
  - 10.5 State the necessity for self-employed business owners to work with an accountant.
11. Discuss concerns relating to owning and operating a Dental Laboratory.
  - 11.1 Discuss general areas of concern relating to the operation of a small business.
12. Discuss current issues and trends that affect Dental Technician practice.
  - 12.1 Recall knowledge about the profession including dental technician regulations, legalities and ethics.
  - 12.2 Discuss issues related to the education and regulation of dental technicians in B.C. and Canada.

- 12.3 Discuss issues related to the Dental Technicians College of B.C.
- 12.4 Discuss the nature of relationships between dental technicians and other dental professional groups, including ways to improve relations if necessary.
- 12.5 Discuss reasons for becoming an active member of a dental technician professional association.
- 12.6 Discuss ethical dilemmas that may be encountered as a graduate dental technician including ways of problem solving the difficulties.
- 12.7 Discuss the ethical obligations to remain competent

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Business Management, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.

### **Course 4001                      Complete Dentures 3                                              3.0 Credits**

This theory and practical course is a continuation of the fabrication of complete dentures integrating the degrees of difficulty. It includes the fabrication of compound cases, immediate dentures, overdentures and dentures over implants.

#### **Learning Outcomes**

- 1. Review laboratory procedures and safety guidelines related to the use and maintenance of lab equipment and instruments used in this course.
  - 1.1 Recall knowledge about the use and maintenance of lab equipment used during the fabrication of complete dentures.
  - 1.2 Safely use and maintain the laboratory equipment and instruments.
- 2. Review the properties of the dental materials used in this course, including the principles of safety and manipulation.
  - 2.1 Recall knowledge about dental materials used for the fabrication of complete dentures.
  - 2.2 Identify the materials required for soft relines, immediate dentures, overdentures and dentures over implants.
- 3. Review the principles related to the fabrication of complete dentures and relate these to complex and compound cases.
  - 3.1 Identify types of compound or complex complete denture cases
  - 3.2 Discuss the considerations related to the fabrication of complete dentures when they are provided in tandem with other dental prostheses.
  - 3.2 Discuss the treatment planning that is involved when complex or compound cases are being fabricated.
- 4. Discuss immediate dentures and principles relating to their fabrication.
  - 4.1 Describe immediate dentures

- 4.2 Discuss the advantages, disadvantages, indications and contraindications for immediate dentures
- 4.3 Discuss modifications to complete denture procedures that are required for the fabrication of immediate dentures
- 4.4 Discuss surgical templates for immediate dentures, including principles for their fabrication.
5. Discuss overdentures and principles relating to their fabrication.
  - 5.1 Describe overdentures, including the function of overdenture abutment teeth
  - 5.2 Discuss the advantages, disadvantages, indications and contraindications for overdentures.
  - 5.3 Discuss design considerations for overdenture abutment teeth
  - 5.4 Describe the preparation of selected overdenture teeth
  - 5.5 Discuss modifications to complete denture procedures that are required for the fabrication of overdentures.
  - 5.6 State maintenance routines recommended for patients with overdentures.
6. Describe dental implants and implants supported dentures, including principles relating to their fabrication.
  - 6.1 Describe osseointegration and dental implants
  - 6.2 Describe component parts of implant systems
  - 6.3 State the advantages, disadvantages, indications and contraindications for dental implants.
  - 6.4 Describe clinical and patient factors that influence the decision to proceed with implants.
  - 6.5 Describe phases of osseointegration treatment, including coordination with the dental technician
  - 6.6 Describe implant abutment heads and attachments appropriate for complete dentures
  - 6.7 Describe modifications to complete denture procedures that are required for the fabrication of implant supported prostheses.
7. Describe customizing complete dentures related to patient's age, gender, race, vitality.
  - 7.1 Discuss how a patient's age is a factor related to fabricating complete dentures.
  - 7.2 Discuss how the gender of the patient impacts on the fabrication of a complete denture.
  - 7.3 Discuss how the fabrication of the complete denture may be modified when considering the race of the patient.
  - 7.4 Describe how the patient's vitality has an impact on the fabrication of complete dentures.
  - 7.5 Describe the customization that would be done related to: patient's age, gender, race and vitality.
8. Describe the process of fabricating complete dentures with a soft liner.
  - 8.1 Discuss the purpose of a soft liner

- 8.2 Describe the procedural steps of fabricating the complete denture with a soft liner.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Complete Dentures 3, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.
- and
- B. Fabricate complete denture cases according to prescription using 30 degree teeth

### **Course 4002                      Partial Dentures 3                                              3.0 Credits**

This theory and practical course is a continuation of the fabrication of partial dentures integrating increasing degrees of difficulty. It includes the fabrication of compound and complex cases, removable partial dentures with attachments and the repair, reline, rebase and extension of partial dentures

### **Learning Outcomes**

1. Review laboratory procedures and safety guidelines related to the use and maintenance of lab equipment and instruments used in this course.
  - 1.1 Recall knowledge about the use and maintenance of lab equipment used during the fabrication of complete dentures.
  - 1.2 Safely use and maintain the laboratory equipment and instruments.
2. Review the properties of the dental materials used in this course, including the principles of safety and manipulation.
  - 2.1 Recall knowledge about dental materials used for the fabrication of partial dentures.
  - 2.2 Identify the materials required for relines, soft relines, repairs, rebases and extensions
3. Discuss removable partial denture attachments and principles relating to their fabrication
  - 3.1 Describe categories of removable partial denture attachments, including their advantages and disadvantages.
  - 3.2 Describe the locations for removable partial denture attachments, including their advantages and disadvantages
  - 3.3 Discuss the functions of various types of removable partial denture attachments
  - 3.4 Discuss the retention of removable partial denture attachments
  - 3.5 Discuss space requirements for removable partial denture attachments

- 3.6 Discuss the biological effect of removable partial denture attachments on oral tissues
- 3.7 Discuss swing locks and their use as a removable partial denture attachments
- 3.8 Discuss removable partial dentures with stress breakers, including principles relating to their fabrication
- 3.9 Discuss treatment planning considerations for removable partial denture precision attachments, including principles relating to their fabrication.
4. Review the principles related to the fabrication of partial dentures and relate these to complex and compound cases.
  - 4.1 Identify types of compound or complex partial denture cases
  - 4.2 Discuss the considerations related to the fabrication of partial dentures when they are provided in tandem with other dental prostheses.
  - 4.3 Discuss the treatment planning that is involved when complex or compound cases are being fabricated.
5. Describe principles relating to the combined fabrication of crowns with a cast partial denture
  - 5.1 State the importance of integration when fixed restorations and a removable partial denture are fabricated for the patient
  - 5.2 Describe surveyed crowns
  - 5.3 Describe principles relating to the fabrication of surveyed crowns
  - 5.4 Describe procedural modifications that may be required for the fabrication of fixed restorations to fit an existing removable partial denture
6. Discuss the repair and maintenance of removable partial dentures
  - 6.1 State problems with removable partial dentures that may affect the patient's oral health
  - 6.2 Describe oral hygiene devices and techniques recommended for patients with removable partial dentures
  - 6.3 Discuss principles for rebasing removable partial dentures
  - 6.4 Discuss principles for relining removable partial dentures
  - 6.5 Discuss principles for repairing removable partial dentures.
  - 6.6 Discuss principles for extending removable partial dentures.
7. Describe customizing removable partial dentures related to patient's age, gender, race, vitality
  - 7.1 Discuss how a patient's age is a factor related to fabricating partial dentures.
  - 7.2 Discuss how the gender of the patient impacts on the fabrication of a partial denture.
  - 7.3 Discuss how the fabrication of the partial denture may be modified when considering the race of the patient.
  - 7.4 Describe how the patient's vitality has an impact on the fabrication of partial dentures.

- 7.5 Describe the customization that would be done related to: patient's age, gender, race and vitality.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Partial Dentures 3, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.
- and
- B. Fabricate a complete maxillary denture and an opposing mandibular Class I, Mod I, Cast Removeable Partial Denture, complete to the try-in stage.

### **Course 4003                      Orthodontics 3                                              3.0 Credits**

This course expands upon the orthodontic theory and laboratory skills from the past three semesters. While expected to maintain the previously achieved orthodontic competencies, students will design, fabricate, problem solve and self evaluate additional complex fixed and removable orthodontic appliances.

### **Learning Outcomes**

1. Review and practice laboratory procedures and guidelines related to the safe use and maintenance of lab equipment and instruments used during this course.
  - 1.1 Recall knowledge related to the safe use and maintenance of equipment and instruments used during previous Orthodontic practice.
  - 1.2 Discuss the safe use and maintenance of equipment and instruments introduced in this course.
  - 1.3 Demonstrate the safe use and maintenance of equipment and instruments during laboratory practice this semester.
2. Select, safely use and manipulate the appropriate dental materials during the fabrication of the orthodontic appliances prescribed in this course.
  - 2.1 Recall knowledge related to the dental materials used in previous orthodontic practice.
  - 2.2 Appropriately select, safely use and manipulate dental materials used for the fabrication of the prescribed orthodontic appliances for this course.
  - 2.3 Recall the procedure for handling orthodontic cases received from the dental office and the procedure of packaging the appliance for delivery to the dental office.
3. Recall knowledge related to jaw relationships and malocclusions.
  - 3.1 Recall knowledge of classifications of occlusal relationships, Class I, II and III

- 3.2 Review the skeletal factors which affect occlusal and jaw development
4. Fabricate heat cured night guards as prescribed
  - 4.1 Recall knowledge related to the purpose of night guards
  - 4.2 Review the procedural steps for the design and fabrication of night guards
  - 4.3 Discuss cautions/precautions related to materials, equipment and technique used for fabricating heat cured night guards
  - 4.4 Fabricate heat cured night guards as prescribed
5. Fabricate TMJ appliances as prescribed
  - 5.1 Discuss the purposes of temporomandibular joint appliances.
  - 5.2 Identify the procedural steps for the design and fabrication of TMJ appliances
  - 5.3 Discuss design cautions related to TMJ appliances
  - 5.4 Fabricate TMJ appliances as prescribed
6. Fabricate expansion devices as prescribed
  - 6.1 Discuss the various types, and components, of expansion appliances
  - 6.2 Identify the procedural steps for the design and fabrication of expansion devices
  - 6.3 Fabricate a rapid maxillary expansion (RME) appliance as prescribed
7. Fabricate Bionators as prescribed
  - 7.1 Discuss the various types and designs and uses of Bionators
  - 7.2 Identify the procedural steps for the design and fabrication of Bionators
  - 7.3 Fabricate Bionator as prescribed
8. Fabricate thumb sucking appliances as prescribed
  - 8.1 Review the effects of habits on occlusion and jaw development
  - 8.2 Discuss the various types and designs of thumb sucking appliances.
  - 8.3 Identify the procedural steps for the design and fabrication of thumb sucking appliances
  - 8.4 Fabricate thumb sucking appliances as prescribed.
9. Fabricate crossbite appliances as prescribed.
  - 9.1 Review the types of crossbites.
  - 9.2 Discuss the various types and designs for crossbite appliances
  - 9.3 Identify the procedural steps for the design and fabrication of crossbite appliances
  - 9.4 Fabricate crossbite appliances as prescribed
10. Fabricate posterior sagittal appliances as prescribed
  - 10.1 Discuss the purpose, types and design for sagittal appliances
  - 10.2 Identify the procedural steps for the design and fabrication of sagittal appliances
  - 10.3 Fabricate sagittal appliances as prescribed.

11. Fabricate retainers as prescribed
  - 11.1 Discuss the purpose, types and uses of retainers
  - 11.2 Identify the procedural steps for the design and fabrication of retainers with soldered labial bow
  - 11.3 Fabricate retainer with soldered labial bow
12. Discuss surgical splints
  - 12.1 Discuss the purpose, types and design for surgical splints
  - 12.2 Identify the procedural steps for the design and fabrication of surgical splints
13. Discuss sleep apnea appliances
  - 13.1 Define sleep apnea
  - 13.2 Discuss the purpose, types and design for sleep apnea appliances
  - 13.3 Identify the procedural steps for the design and fabrication of sleep apnea appliances

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Orthodontics 3, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.
- and
- B. Fabricate a bionator or twin block functional appliance
- and
- C. Fabricate a cross-bite appliance
- and
- D. Fabricate a sagittal expander

### **Course 4004      Fixed Prosthodontics 2      6 credits**

This theory and laboratory course expands upon information and techniques into the study and fabrication of multiple unit restorations as the dental technician students learns to fabricate various types of metal, ceramo/metal and all ceramic/porcelain/composite bridges. Advanced Prosthodontic techniques and prescriptions are followed.

### **Learning Outcomes**

1. Apply laboratory procedures and guidelines related to the use and maintenance of lab equipment and instruments used in this course
  - 1.1 Recall knowledge about the safe use and maintenance of lab equipment and instruments used in semesters two and three
  - 1.2 Discuss, safely use and maintain equipment and instruments introduced during the fabrication of multiple unit restorations.

2. Discuss the properties of the dental materials used for the fabrication of fixed restorations, including principles of safety and manipulation.
  - 2.1 Recall knowledge of dental materials used for fabricating fixed prostheses in semesters two and three
  - 2.2 Discuss the properties of the various materials used for non metal fixed restorations.
  - 2.3 Compare the materials used for non metal fixed restorations related to their indications and contraindications for use and their advantages and disadvantages.
3. Discuss basic concepts relating to multiple unit restorations.
  - 3.1 Discuss terminology relating to fixed bridges, including component parts.
  - 3.2 Discuss purposes of a fixed bridge.
  - 3.3 Describe types of fixed bridges
  - 3.4 Identify types of fixed bridges including their component parts
  - 3.5 Discuss the sequencing of clinical and laboratory procedures for the fabrication of multiple unit restorations.
  - 3.6 Describe the information that would be required on a prescription for fabrication of multiple unit restorations.
4. Discuss esthetics, form and function relating to multiple unit fixed restorations.
  - 4.1 Recall knowledge about esthetics, form and function relating to tooth contour and margin preparations of single unit metal restorations.
  - 4.2 Discuss the occlusal requirements of multiples unit restorations to withstand functional forces of mastication.
  - 4.3 Discuss design requirements of a pontic
  - 4.4 Discuss the effects of various pontic designs on oral soft and hard tissues.
  - 4.5 Discuss oral hygiene aids recommended for patients with multiple restorations and their influence on pontic design.
5. Discuss principles relating to the fabrication of various types of multiple unit restorations, including temporary bridges and alternative waxing and casting techniques.
  - 5.1 Discuss temporary bridges including principles related to their fabrication
  - 5.2 Discuss splints including principles relating to their fabrication
  - 5.3 Discuss hygienic bridges including principles relating to their fabrication
  - 5.4 Discuss cantilever bridges including principles relating to their fabrication
  - 5.5 Discuss non-rigid broken stress bridges and telescopic bridges including principles relating to their fabrication.
  - 5.6 Discuss precision attachments including principles relating to their fabrication.
  - 5.7 Discuss Maryland bridges including principles relating to their fabrication

- 5.8 Discuss alternate techniques used during the fabrication of metal and ceramo/metal restorations
6. Discuss principles and techniques relating to the fabrication of multiple unit metal restorations.
  - 6.1 Recall principles and techniques for fabricating single unit restorations
  - 6.2 Discuss principles for constructing die models for multiple unit restorations
  - 6.3 Discuss principles for fabricating transfer copings and wax patterns for multiple unit metal restorations
  - 6.4 Discuss principles for sprueing a one piece multiple unit wax pattern
  - 6.5 Discuss principles for investing wax patterns for multiple unit metal restorations.
  - 6.6 Discuss modifications to single unit metal restoration techniques for the processing and finishing of multiple unit metal restorations.
  - 6.7 Discuss principles related to soldering individually cast components of a multiple unit restoration.
7. Discuss principles and techniques relating to the fabrication of multiple unit ceramo/metal restorations.
  - 7.1 Recall principles and techniques for fabricating single unit ceramo/metal restorations.
  - 7.2 Discuss principles and techniques for waxing one piece ceramo/metal frameworks of multiple unit restorations.
  - 7.3 Discuss modifications to single unit ceramo/metal restoration techniques for the processing and finishing of one piece multiple unit ceramo/metal restorations.
8. Discuss advanced esthetic techniques for ceramo/metal restorations as well as additional types of full ceramic, porcelain and composite restorations, including principles relating to their fabrication
  - 8.1 Discuss further esthetic techniques for ceramo/metal restorations
  - 8.2 Discuss esthetic techniques related to non metal restorations, including porcelain, ceramics, composite.
  - 8.3 Discuss porcelain veneers, including principles relating to their fabrication
  - 8.4 Discuss porcelain jacket crowns including principles relating to their fabrication
  - 8.5 Discuss ceramic inlays and onlays including principles relating to their fabrication
  - 8.6 Discuss the fabrication of restorations fabricated with other tooth colored restorative materials such as composite, pressable ceramics
9. Describe implant supported fixed restorations, including principles relating to their fabrication.
  - 9.1 Discuss osseo-integration and implant systems and techniques, including principles relating to the fabrication of implant supported fixed restorations.

- 9.2 Describe implant abutment heads appropriate for single or multiple unit fixed metal or ceramo/metal restorations.
- 9.3 Describe modifications to fixed prosthodontic procedures that are required for the fabrication of implant supported fixed restorations/prostheses.
- 10. Fabricate multiple unit fixed restorations according to prescription.
  - 10.1 Identify the component parts of the prescription that is required for fabricating multiple unit fixed restorations.
  - 10.2 According to prescriptions given, fabricate multiple unit fixed restorations.

### **Prior Learning Assessment and Recognition**

In order to be assessed for equivalent knowledge in Fixed Prosthodontics 2, you will do the following:

- A. Write a comprehensive exam based on the content in the course materials and the course learning outcomes.
- and
- B. Fabricate a 3 unit full gold bridge ready for delivery.
- and
- C. Fabricate a single unit metal/porcelain occlusion PFM (anterior/posterior) ready for delivery.
- and
- D. Fabricate upper anterior with butt margins design ready for delivery.
- and
- E. Fabricate an anterior/posterior All ceramic restoration ready for delivery.
- And
- F. Fabricate 3 units of PFM bridges ready for delivery.

## VI Next Steps

Once you have received this material, and determined that prior learning assessment may be an option for you, you will need to do the following:

1. Complete the program prerequisites.
2. Apply to the Dental Technology Program at VCC. An application has been included in this package for your convenience. Along with the application you should include:
  - Documentation which supports that you meet the academic requirements (see page 4 re program pre-requisites)
  - Documentation that supports your work experience in this field
  - A \$30.00 program application fee
3. Review the Prior Learning Assessment requirements for each of the courses within the Dental Technology Program. These are included in this package. In demonstrating prior learning, a candidate must be able to successfully achieve all of the learning outcomes for a particular course. In those courses that offer both a challenge exam and theory component, both knowledge and skills must be successfully demonstrated. Based on your review of this material, you will determine which courses you feel you can successfully challenge.
4. Complete an application for Prior Learning Assessment. Please be aware that you cannot apply for **more than two courses at any one time**. This is to ensure that your work load is manageable. The “Application for Prior Learning Assessment in the Dental Technology Program” is included in this package. The type of challenge and its cost is indicated for each course.
5. Complete the challenge requirements for the courses. At the present time, challenge exams can be completed in your home community using a proctor to invigilate your exam. You will be responsible for the cost relating to this, if any. The laboratory challenges must be completed at Vancouver Community College.
6. Make arrangements with Vancouver Community College to take the courses where there are no prior learning assessment options.

## APPENDIX A

Title: **Prior Learning Assessment and Recognition Policy**  
 Effective Date: **June 26, 1997**  
 Date of Last Revision: **October 5, 2004**  
 Policy Category: **Education Support**  
 Number: **D.3.5**

## **Prior Learning Assessment & Recognition Policy**

### **(Flexible Assessment or PLAR)**

<b>Purpose</b>	To support and enhance Prior Learning Assessment & Recognition Policy at Vancouver Community College.
<b>Policy</b>	Vancouver Community College recognizes Prior Learning Assessment and Recognition as one means for students to complete their course of study. Departments, in collaboration with the Registrar and appropriate administrator, can grant credit towards a program or course(s) for learning acquired through experience or nonformal education/training.
<b>Applies to</b>	To all students, student support services and educational divisions.
<b>Procedures</b>	<ol style="list-style-type: none"> <li>1. Departments in conjunction with the appropriate Education Dean, Dean of Student Services and Registrar will establish program PLAR guidelines and implementation procedures.</li> <li>2. Prior Learning Assessment and Recognition information will be made available to all students through Counselling, the college web site, and brochures.</li> <li>3. Each department will develop the appropriate content specific PLAR guidelines.</li> <li>4. PLAR guidelines will be available from Counselling and the Program Department.</li> <li>5. Departments wanting to award prior learning credits for a course(s) must have a current curriculum with measurable learning outcomes approved by EDCO that can be used for assessment of prior learning.</li> <li>6. Prior Learning Assessment and Recognition credit will be recognized as formal credit on a student's transcript in</li> </ol>

- accordance with the college grading policy.
7. Grades generated from PLAR on a student transcript. All student grading will follow grading policy.
  8. Students requesting Prior Learning Assessment and Recognition must apply and meet all the entrance requirements or be accepted for a VCC program prior to requesting PLAR from a department.
  9. Students can apply for Prior Learning Assessment and Recognition for up to 75% of a program.
  10. Students requesting a combination of exemption, transfer credit, and Prior Learning Assessment and Recognition can only combine these three options to the maximums stated in nine (9) above.
  11. Credit will be awarded only if the student has provided evidence of sufficient and current learning as specified by the Program PLAR Guidelines.
  12. Non-refundable, non-transferable assessment fees will be levied for PLAR. Fees vary depending on the type of assessment.
  13. Current grade appeal policies apply to Prior Learning Assessment and Recognition.
  14. Students can withdraw their request for prior learning up to, but not including the date of assessment. The student will be refunded their PLAR fee minus a processing fee.

## **References** C.1.1. Course/Program Grading Policy

C.1.2 Appeal of Final Grade Policy

C.1.3 Granting of College Diplomas, Certificates and Statements of Completion Policy

D.3.4 Refund Policy

D.3.6 Admissions Policy

D.3.7 Tuition and Fee Policy

**Policy Sponsor** Vice President, Education

### **2. Approvals:**

President Date:

Education Council Chair Date:

### **3. Amendments**

President Date:

Education Council Chair Date:

Operations Council Chair Date:

Board Chair Date:

### **4. Review Date**

